FCC/IC SAR TEST REPORT - VHF BAND

RF EXPOSURE EVALUATION | SPECIFIC ABSORPTION RATE

APPLICANT / MANUFACTURER	HARRIS CORPORATION - RF COMMUNICATIONS DIVISION				
DEVICE UNDER TEST (DUT)	PORTABLE PTT MULTI-BAND RADIO TRANSCEIVER				
DEVICE MODEL(S)	UNITY XG-100P				
TRANSMIT FREQUENCY BAND(S)	VHF	FREQUENCY RANGE(S)		FCC	150.8 - 173.4 MHz
				IC	138.0 - 144.0 MHz
					150.0 - 174.0 MHz
MANUF. RATED OUTPUT POWER	38.0 dBm	6.3 Watts	+0.5/-0.2 dB	Conducted	VHF Band
DEVICE MODES OF OPERATION	ANALOG - FM			P25 Phase 1 - FDMA	
DEVICE IDENTIFIER(S)	FCC ID:	AQZ-XG-100P00		IC:	122D-XG100P00
APPLICATION TYPE	FCC/IC Certification				
APPLICABLE RULE PART(S)	FCC Parts 22, 80, 90			IC RSS-119 Issue 9	
STANDARD(S) APPLIED	FCC 47 CFR §2.1093				
	Health Canada Safety Code 6				
PROCEDURE(S) APPLIED	FCC OET Bulletin 65, Supplement C (01-01)				
	FCC KDB 447498 D01v04			FCC KDB Inquiry No. 794297	
	Industry Canada RSS-102 Issue 3				
	IEEE 1528-2003	IEC 62209-1:2005		IEC 62209-2 (Draft)	
FCC DEVICE CLASSIFICATION	Licensed Non-Broadcast Transmitter Held to Face (TNF)				
IC DEVICE CLASSIFICATION	Land Mobile Radio Transmitter/Receiver (27.41-960 MHz)				
RF EXPOSURE CATEGORY	Occupational / Controlled				
RF EXPOSURE EVALUATION(S)	Face-held & Body-worn				
DATE(S) OF EVALUATION	October 29 & November 02, 2009				
TEST REPORT SERIAL NO.	102809AQZ-T991-S90V				
TEST REPORT REVISION NO.	Revision 1.2	See Revision List (Pg. 4)		December 23, 2009	
	Revision 1.1	See Revision List (Pg. 4)		December 22, 2009	
	Revision 1.0	Initial Release		December 03, 2009	
TEST REPORT SIGNATORIES	Testing Performed By			Test Report Prepared By	
	Sean Johnston Celltech Labs Inc.			Jonathan Hughes Celltech Labs Inc.	
TEST LAB AND LOCATION	Celltech Compliance Testing and Engineering Lab				
	21-364 Lougheed Road, Kelowna, B.C. V1X 7R8 Canada				
TEST LAB CONTACT INFO.	Tel.: 250-765-7650			Fax: 250-765-7645	
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TEST LAB ACCREDITATION(S)	ISO/IEC 17025:2005 (A2LA Test Lab Certificate No. 2470.01)				

DECLARATION OF COMPLIANCE
SAR RF EXPOSURE EVALUATION

Test Lab Information	**Name**	**CELLTECH LABS INC.**				
	Address	21-364 Lougheed Road, Kelowna, B.C. V1X 7R8 Canada				
Applicant Information	**Name**	**HARRIS CORPORATION - RF COMMUNICATIONS DIVISION**				
	Address	1680 University Avenue, Rochester, NY 14610 United States				
Standard(s) Applied	**FCC**	47 CFR §2.1093	**IC**	Health Canada Safety Code 6		
Procedure(s) Applied	**FCC**	OET Bulletin 65, Supplement C	**IC**	RSS-102 Issue 3		
	FCC	KDB 447498 D01v04	KDB Inquiry Tracking No. 794297			
	IEEE	1528-2003	**IEC**	62209-1:2005	**IEC**	62209-2 (Draft)
Device Identifier(s)	**FCC ID:**	AQZ-XG-100P00	**IC:**	122D-XG100P00		
Device Model(s)	UNITY XG-100P	**Test Sample Serial No.**	EM067 (Identical Prototype)			
Device Description	**VHF PTT**	Portable Push-To-Talk (PTT) Multi-Band Radio Transceiver (Analog FM / Digital P25 FDMA)				
	Bluetooth	Class 1 Bluetooth - Pwr = > 60/$f_{(GHz)}$ mW - Manuf. max. cond. pwr spec. = 20 dBm (Average) Supports simultaneous transmission - PTT antenna to Bluetooth antenna distance = ~ 130 mm				
DUT Hardware / Software Revisions	Version SW Platform 12082-8900_0.1.8	Version SW Build Nov 9 2009 - 11:58:03				
	Version HW FPGA LMR_091509_1358	Version HW FPGA_PN 12082-4030-01				
Frequency Range(s) Applied (VHF)	150.8 - 173.4 MHz (FCC)	138.0 - 144.0 MHz (IC)	150.0 - 174 MHz (IC)			
Manufacturer's Rated Output Power	38.0 dBm	6.3 Watts	+0.5 / -0.2 dB	Conducted	VHF Band	
Test Channels & RF Output Power	IC	B1	141.0 MHz	38.2 dBm	6.6 Watts	Conducted
	N_c = 5	1	150.8 MHz	38.2 dBm	6.6 Watts	Conducted
		2	156.5 MHz	38.2 dBm	6.6 Watts	Conducted
		3	162.1 MHz	38.2 dBm	6.6 Watts	Conducted
		4	168.0 MHz	38.2 dBm	6.6 Watts	Conducted
		5	173.4 MHz	38.2 dBm	6.6 Watts	Conducted
Antenna Type(s) Tested	Ext. Detachable - Full-Spectrum Multi-Band	P/N: 12082-0250-01	Length: 240 mm			
Battery Type(s) Tested	Lithium-ion	7.4 V	3650 mAh	P/N: 12082-0308-01		
	Alkaline Case	1.5 V (x6 AA)	Energizer Industrial	P/N: 12082-0309-01		
Body-worn Accessories Tested	Metal Belt-Clip	1.2 cm Spacing	Contains Metal	P/N: 12082-1291-01		
	Nylon Case (Window) Nylon Shoulder Strap	1.5 cm Spacing	Contains Metal	P/N: 12082-0512-01		
			Contains Metal	P/N: 12082-0504-01		
	Leather Case (D-Rings) Full with Shoulder Strap	1.5 cm Spacing	Contains Metal	P/N: 12082-0500-01		
			Contains Metal	P/N: 12082-0505-01		
	Leather Case (D-Clip) Full with Swivel Belt-Loop (3")	4.5 cm Spacing	Contains Metal	P/N: 12082-0502-02		
Audio Accessories Tested	Speaker-Microphone	P/N: 12082-0600-01				
Max. SAR Level(s) Evaluated	Face-held	**0.403 W/kg**	1g	50% PTT duty cycle	Occupational / Controlled Exp.	
	Body-worn	**2.12 W/kg**	1g	50% PTT duty cycle	Occupational / Controlled Exp.	
FCC/IC Spatial Peak SAR Limit	Head/Body	8.0 W/kg	1g	50% PTT duty cycle	Occupational / Controlled Exp.	

Celltech Labs Inc. declares under its sole responsibility that this wireless portable device has demonstrated compliance with the Specific Absorption Rate (SAR) RF exposure measurement standards and procedures as listed above. All measurements were performed in accordance with the SAR system manufacturer recommendations.

I attest to the accuracy of data. All measurements were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

The results and statements contained in this report pertain only to the device(s) evaluated.

This test report shall not be reproduced partially, or in full, without the prior written approval of Celltech Labs Inc.

Test Report Approved By		**Sean Johnston**	**Celltech Labs Inc.**

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REVISION HISTORY		
REVISION NO.	**DESCRIPTION**	**RELEASE DATE**
1.0	Initial Release	December 03, 2009
1.1	1. Added Revision History (page 4) 2. Changed FCC ID and IC ID (per Harris Corporation) all pages 3. Changed nominal rated power specification (per Harris Corporation) pgs 1-2 4. Revised conducted output power measurement table (Section 4, page 6) 5. Corrected Bluetooth maximum average conducted output power (page 2) 6. Reduced items 10-11 to item 10 only - simultaneous transmission (page 12) 7. Changed Belt-Clip part no. to 12082-1291-01 (per Harris Corporation) 8. Corrected part no. of Leather Case (Full) and Swivel Belt-Loop accessory evaluated for SAR to part no. 12082-0502-02 (3" loop) and corrected item 3e to 3" loop (Section 10, page 12) 9. Revised description of difference between 2.5" and 3" Swivel Belt-Loop (pages 5 and 9) and corresponding accessory listing note no. reference (pg 5) 10. Corrected separation distance provided by the Leather Case (Full) and 3" Swivel Belt-Loop accessory (back of radio to phantom & antenna to phantom) 11. Added photos of Leather Case (D-Rings) Half - p/n 12082-0501-01 (page 76) 12. Added photos of 2.5" Belt-Loop (page 81) 13. Revised PTT antenna to Bluetooth antenna distance (page 2) 14. Corrected test sample serial number on SAR test plots (Appendix A)	December 22, 2009
1.2	Corrected IC ID (all pages)	December 23, 2009

1.0 DUT ACCESSORY LISTING

Part Number	Accessory Type	Inc. in SAR Eval.
12082-0250-01	ANTENNA, UNITY, 136-870 MHz, HELICAL	Yes
12082-0308-01	BATTERY, LITHIUM-ION	Yes
12082-0600-01	STANDARD SPEAKER MICROPHONE	Yes
12082-0310-01	CHARGER, 1-BAY, TRI-CHEMISTRY	n/a
12082-0314-01	CHARGER, 6-BAY, TRI-CHEMISTRY	n/a
12082-0309-01	BATTERY, AA CLAMSHELL	Yes
12082-1291-01	BELT CLIP, METAL	Yes
12082-0504-01	STRAP, NYLON	Yes
12082-0505-01	STRAP, LEATHER	Yes
12082-0512-01	CASE, NYLON, WINDOW, T-STRAP	Yes
12082-0510-01	CASE, NYLON, FULL, T-STRAP	No[1]
12082-0507-02	CASE, LEATHER, HALF, 3" LOOP	No[3]
12082-0507-01	CASE, LEATHER, HALF, 2.5" LOOP	No[2]
12082-0502-02	CASE, LEATHER, FULL, 3" LOOP	Yes
12082-0502-01	CASE, LEATHER, FULL, 2.5" LOOP	No[2]
12082-0501-01	CASE, LEATHER, HALF, T-STRAP	No[4]
12082-0500-01	CASE, LEATHER, FULL, T-STRAP	Yes
12082-0410-A1	CABLE, USB Programming	n/a
12082-0400-A1	CABLE, KVL Key Loading	n/a

Notes

1. Accessory not evaluated due to identical SAR characteristics as the Nylon Case (Window) accessory evaluated for SAR - the only difference is the Nylon Case (Full) accessory has full nylon material on the front side (radio keypad side) of the accessory whereas the Nylon Case (Window) accessory has clear plastic material on the front side (radio keypad side) of the accessory.

2. Accessories not evaluated due to identical SAR characteristics as the Leather Case with 3” Swivel Belt-Loop evaluated for SAR. The only difference is the increased length (0.5”) of the inside gap on the 3” Belt-Loop to accommodate a wider belt and the 2.5” Belt-Loop is otherwise identical to the 3” Belt-Loop evaluated for SAR. Both the 2.5” and 3” belt-loops provide the same separation distance from the back of the radio to planar phantom.

3. Accessory not evaluated due to identical SAR characteristics as the Leather Case (Full) with Swivel Belt-Loop accessory evaluated for SAR - the only difference is the amount of leather material (Half versus Full) on the front side (radio keypad side) of the accessory.

4. Accessory not evaluated due to identical SAR characteristics as the Leather Case (Full) with Shoulder Strap accessory evaluated for SAR - the only difference is the amount of leather material (Half versus Full) on the front side (radio keypad side) of the accessory.

2.0 INTRODUCTION

This measurement report demonstrates that the Harris Corporation Model: XG-100P Portable Analog/Digital PTT Multi-Band Radio Transceiver (VHF Band) complies with the SAR (Specific Absorption Rate) RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) and Health Canada's Safety Code 6 (see reference [2]) for the Occupational / Controlled Exposure environment. The measurement procedures described in FCC OET Bulletin 65, Supplement C 01-01 (see reference [3]), IC RSS-102 Issue 3 (see reference [4]), IEEE Standard 1528-2003 (see reference [5]), IEC Standard 62209-1:2005 (see reference [6]) and Draft Standard IEC 62209-2 (see reference [7]) were employed. A description of the device, operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used and the various provisions of the rules are included within this test report.

3.0 SAR MEASUREMENT SYSTEM

Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 measurement system is comprised of the measurement server, robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for head and/or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the DASY4 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the DASY4 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot uses a controller with a built in VME-bus computer.

4.0 RF CONDUCTED OUTPUT POWER MEASUREMENTS

MEASURED RF CONDUCTED OUTPUT POWER LEVELS

N_c = 5[1]	Freq. (MHz)	Mode	Watts	dBm	Manuf. Nominal Rated Output Power	
					dBm	Tolerance Spec.
1	150.8	CW	6.6	38.2	38.0	+0.5 / -0.2 dB
2	156.5	CW	6.6	38.2		
3	162.1	CW	6.6	38.2		
4	168.0	CW	6.6	38.2		
5	173.4	CW	6.6	38.2		
IC	141.0	CW	6.6	38.2		

Notes

1. The test channels were selected in accordance with the procedural guidelines of FCC KDB Inquiry No. 794297.
2. The RF conducted output power levels of the DUT were measured by Celltech prior to the SAR evaluations using a Gigatronics 8652A Universal Power Meter at the external antenna connector.
3. The DUT was preset by the manufacturer to the nominal rated conducted output power level. The SAR levels measured and reported are well below the SAR limit with sufficient margin for compliance at the upper tolerance spec.

5.0 FCC POWER THRESHOLDS FOR PTT DEVICES ($f \leq 0.5$ GHz)

FCC SAR Evaluation Power Thresholds for PTT Devices, $f \leq 0.5$ GHz*			Manufacturer's Rated RF Output Power	
Exposure Conditions	***P* mW (General Population)**	***P* mW (Occupational)**	**100% PTT Duty Cycle**	**50% PTT Duty Cycle**
Held to face, $d \geq 2.5$ cm	250	**1250**	6.6 Watts	**3.3 Watts**
Body-worn, $d \geq 1.5$ cm	200	1000		
Body-worn, $d \geq 1.0$ cm	150	**750**	6.6 Watts	**3.3 Watts**
1. The time-averaged output power, corresponding to the required PTT duty factor, is compared with these thresholds. 2. The closest distance between the user and the device or its antenna is used to determine the power thresholds. * Per FCC KDB 447498 D01v04 Section 5)b)i) (see reference [8]).			1. The conducted output power level of the DUT exceeds the FCC power threshold and therefore SAR evaluation is required.	

6.0 SAR PROBE CALIBRATION & MEASUREMENT FREQUENCIES

The following procedures are recommended for measurements at 150 MHz - 3 GHz to minimize probe calibration and tissue dielectric parameter discrepancies. In general, SAR measurements below 300 MHz should be within ±50 MHz of the probe calibration frequency. At 300 MHz to 3 GHz, measurements should be within ±100 MHz of the probe calibration frequency. Measurements exceeding 50% of these intervals, ±25 MHz < 300 MHz and ±50 MHz ≥300 MHz, require additional steps (per FCC KDB 450824 D01 v01r01, SAR Probe Calibration and System Verification Considerations for Measurements at 150 MHz - 3 GHz - see reference [9]).

Probe Calibration Freq.	Device Measurement Freq.	Frequency Interval	±25 MHz ≤ 300 MHz
150 MHz	150.8 MHz	0.8 MHz	**< 25 MHz**
	156.5 MHz	6.5 MHz	**< 25 MHz**
	162.1 MHz	12.1 MHz	**< 25 MHz**
	168.0 MHz	18.0 MHz	**< 25 MHz**
	173.4 MHz	23.4 MHz	**< 25 MHz**
Note: The probe calibration and measurement frequency interval is < 25 MHz; therefore the additional steps were not required.			

7.0 FCC SAR TEST REDUCTION PROCEDURES (KDB 794297)

The following procedures were applied to determine the number of test frequencies and channels to be evaluated for SAR based on the number-of-test-frequencies formula for test frequency reduction provision prescribed by the FCC in KDB Inquiry Tracking No. 794297 (interim ptt device test redux adjusted2).

FCC KDB Inquiry Tracking No. 794297 (interim ptt device test redux adjusted2)

1) Antennas are the primary radiating structures for wireless transmitters, and therefore are generally not considered for test reductions in similar manners as other accessories. When multiple antennas are available, each antenna should be tested at the required frequency channels according to the transmission band covered by the specific antenna used for the device (e.g. some antennas may not cover all transmission bands), and according to the required accessory combinations determined under an acceptable test reduction plan, as described in the following items. For antennas that are substantially equivalent as confirmed by SAR data, e.g. at the highest SAR channel with equivalent (practically identical) SAR distributions, testing at other channels for other similar antennas may be optional, provided that the SAR results do not show unexpected or significant changes among the other channels tested.

There is only one antenna option for the Unity XG-100P.

2) Each antenna (among the one or more available antennas) should be tested at its mid-band channel, for all accessories in each accessory category, to determine the highest SAR configuration for each accessory category (i.e. battery, body-worn and audio accessories etc.). Because a battery is the minimum accessory necessary for the device to function, the testing procedures for each antenna [at the mid-band channel, or for the two or three channels specified per item 7)] should start by determining the highest SAR for each battery category (e.g. long and short physical dimensions, etc.), and without any body-worn and audio accessories, for body and head configurations. The highest SAR configuration in each battery category should be tested with each applicable body-worn accessory combination for each antenna at the mid-band channel to determine the body-worn accessory with highest SAR. It is assumed that the audio accessories are only used in conjunction with specific body-worn accessories; therefore, the process may continue by testing each antenna at the mid-band channel using the highest SAR battery in each battery category and the highest SAR body-worn accessory to determine the highest SAR audio accessory. The combination of highest SAR battery per category, and body-worn and audio accessories, should be used to perform testing for the other channels per item 1).

For body-worn configuration, ”baseline” highest SAR search procedure evaluations were performed in order to determine the highest SAR for each battery category (Lithium-ion and Alkaline) without any body-worn or audio accessories connected. The highest SAR configuration in each battery category was tested with each applicable body-worn accessory combination at the 3rd (Mid) channel (see Note 1 under item 7) in order to determine the body-worn accessory with the highest SAR. The specified speaker-microphone is the only audio accessory option for the Unity XG-100P (excluding the wireless Speaker-Microphone with Bluetooth audio accessory). The remaining 1st, 2nd, 4th and 5th test channels were subsequently evaluated with the highest SAR battery and body-worn accessory configuration. For face-held configuration, the "baseline" highest SAR search procedure evaluations were addressed by the required face-held SAR measurements evaluated at 2.5 cm spacing from the planar phantom.

3) It is anticipated that the different batteries, and body-worn and audio accessories, may not operate together in all combinations. It may be necessary to sub-categorize the body-worn and audio accessories, similar to the long and short battery categories, to facilitate searching for the highest SAR configuration for the other channel testing of item 1).

Both the Lithium-ion and Alkaline battery types can be utilized with all specified body-worn accessories and the specified speaker-microphone audio accessory.

4) In each step of the highest SAR configuration search for each accessory category [i.e. item 2)], besides determining the highest SAR configurations, all configurations in each accessory category with SAR larger than 70% of the limit should also be included in the highest SAR search using subsequent accessories (body-worn, audio etc.) and in the other channel testing of item 1).

All measured SAR levels were less than 70% of the limit (50% PTT duty factor).

5) Accessories that can be demonstrated to have identical SAR characteristics and/or noticeably lower SAR may be excluded in the search procedure of item 2) with acceptable justification clearly documented.

FCC SAR TEST REDUCTION PROCEDURES (CONT.)

Test exclusion from the SAR search procedures was applied to the Nylon Case (Full) accessory. The Nylon Case (Full) accessory was determined to have identical SAR characteristics as the Nylon Case (Window) accessory evaluated for SAR, based on the only difference is the Nylon Case (Full) accessory has full nylon material on the front side (radio keypad side) of the accessory whereas the Nylon Case (Window) accessory has clear plastic material on the front side (radio keypad side) of the accessory.

Test exclusion from the SAR search procedures was applied to the Leather Case (Half) with Shoulder Strap accessory. The Leather Case (Half) accessory was determined to have identical SAR characteristics as the Leather Case (Full) accessory evaluated for SAR, based on the only difference is the Leather Case (Half) accessory only has leather material on half of the front side (radio keypad side) of the accessory (the remainder is open-faced) whereas the Leather Case (Full) accessory contains leather material on all of the front side (radio keypad side) of the accessory.

Test reduction was applied to the Leather Case (Full) accessory with Swivel Belt-Loop (3") attachment. The Swivel Belt-Loop attachment contains a metal plate which hooks on to the metal swivel on the Leather Case accessory. The Leather Case with Swivel Belt-Loop accessory provides a 4.5 cm spacing from the back side of the DUT to the planar phantom versus the 1.5 cm spacing the Leather Case with Metal D-Rings and Shoulder Strap accessory provides. The Leather Case (Full) with Swivel Belt-Loop (3") accessory was included in the highest SAR search procedures based on the significant amount of metal contained in the accessory components; however based on the increased spacing from the back of the DUT to the planar phantom the Leather Case (Full) with Swivel Belt-Loop (3") was only evaluated with the Lithium-ion battery.

Test exclusion from the SAR search procedures was applied to the Leather Case (Half) with Swivel Belt-Loop accessory. The Leather Case (Half) with Swivel Belt-Loop accessory was determined to have identical SAR characteristics as the Leather Case (Full) with Swivel Belt-Loop accessory evaluated for SAR; based on the only difference is the amount of leather material (Half versus Full) on the front side (radio keypad side) of the accessory.

Test exclusion from the SAR search procedures was applied to the Leather Case with Swivel Belt-Loop (2.5") accessory. The Leather Case with Swivel Belt-Loop (2.5") accessory was determined to have identical SAR characteristics as the Leather Case with Swivel Belt-Loop (3") evaluated for SAR. The only difference is the increased length (0.5") of the inside gap on the 3" Belt-Loop to accommodate a wider belt and the 2.5" Belt-Loop is otherwise identical to the 3" Belt-Loop evaluated for SAR. Both the 2.5" and 3" belt-loops provide the same separation distance from the back of the radio to the planar phantom.

6) The highest SAR search procedures of item 2) should be applied separately to each exposure condition; for example, held-to-face and body etc. configurations, and must be tested with the required separation distance from the relevant surface of the device (e.g. back or front). Transmitters designed to operate in push-to-talk configurations in front of a person's face should be tested with the device positioned at 2.5 cm from a flat phantom. Initial testing for body configurations under item 2) should position the device at the smallest distance that would be provided by any intended accessories used in the subsequent highest SAR search procedures.

For the body-worn "baseline" highest SAR search procedure evaluations an air-gap spacing of 1.2 cm was utilized between the back of the DUT and the planar phantom based on the smallest distance provided by the belt-clip accessory. For the face-held configuration the "baseline" highest SAR search procedure evaluations were addressed by the required face-held SAR measurements evaluated at 2.5 cm spacing from the planar phantom.

7) When the operating bandwidth of an antenna is larger than 10% of the mid-band channel frequency, more than 3 channels (high, middle, and low) will need to be tested under item 1). When 5 channels are required for testing, the 2nd and 4th channel in the sequence should be used in the search procedures in item 2) instead of the mid-band channel. When 7 channels are required, in addition to the mid-band channel the 2nd and the 6th should also be tested in the search procedures of item 2).

The following formula prescribed by the FCC in KDB Inquiry Tracking No. 794297 was applied in order to determine the required number of test frequencies:

Nc = Round { [100 x (fh - fl) / fc]^0.5 x (fc / 100)^0.2 }

fh	fl	fh-fl	fc	% BW	Nc
150.8	173.4	22.6	162.1	14	4

Notes:

1. Per FCC KDB 794297: concerning att. herein entitled {interim ptt device test redux adjusted2} - for Nc = 4 and Nc = 2, use fc for the baseline and the other testing under step 2) of that att., then final test configuration will have the fc results plus the Nc = 4 and Nc = 2 equi-spaced channels (final test total 5 ch and 3 ch. resp.)

8.0 SAR MEASUREMENT SUMMARY

SAR EVALUATION MEASUREMENT RESULTS

Test Type	Test Date	Freq.	Test Chan.	Battery Type	Accessory Type(s)		Device Distance to Planar Phantom		Cond. Power Before Test	Measured SAR 1g (W/kg)		SAR Drift During Test	Scaled SAR with droop 1g (W/kg)	
										PTT Duty Cycle			PTT Duty Cycle	
		MHz	N_c = 5		Body-worn	Audio	DUT	Antenna	Watts	100%	50%	dB	100%	50%
Face	Oct 29	162.1	3	Li-ion	n/a	n/a	2.5 cm	5.0 cm	6.6	0.734	0.367	-0.132	0.757	0.379
Face	Oct 29			Alkaline					6.6	0.645	0.323	-0.961	0.805	**0.403**
Face	Oct 29	150.8	1	Li-ion					6.6	0.695	0.348	-0.163	0.722	0.361
Face	Oct 29	156.5	2						6.6	0.693	0.347	-0.110	0.711	0.356
Face	Oct 29	168.0	3						6.6	0.634	0.317	-0.194	0.663	0.332
Face	Oct 29	173.4	4						6.6	0.707	0.354	-0.401	0.775	0.388
Face	Oct 29	141.0	IC[1]						6.6	0.592	0.296	-0.393	0.648	0.324
Body	Nov 2	162.1	3	Li-ion	None (Baseline)	None (Baseline)	1.2 cm	2.0 cm	6.6	1.86	0.930	-0.181	1.94	0.970
Body	Nov 2			Alkaline					6.6	1.67	0.835	-0.309	1.79	0.897
Body	Nov 2	162.1	3	Li-ion	Metal Belt-Clip	Spkr-Mic	1.2 cm	2.0 cm	6.6	**P** 2.93	1.47	-0.165	**P** 3.04	1.52
										S 1.93	0.965	-0.099	**P** 1.98	0.990
Body	Nov 2			Alkaline					6.6	**P** 2.86	1.43	-0.284	**P** 3.05	1.53
										S 1.96	0.980	-0.429	**S** 2.16	1.08
Body	Nov 2	162.1	3	Li-ion	Nylon Case Shoulder Strap	Spkr-Mic	1.5 cm	2.2 cm	6.6	**P** 2.15	1.08	-0.169	**P** 2.24	1.12
										S 1.89	0.945	-0.063	**S** 1.92	0.960
Body	Nov 2			Alkaline					6.6	**P** 1.88	0.940	-0.779	**P** 2.25	1.13
										S 1.36	0.680	-1.48	**S** 1.91	0.956
Body	Nov 2	162.1	3	Li-ion	Leather Case Shoulder Strap	Spkr-Mic	1.5 cm	2.2 cm	6.6	1.99	0.995	-0.115	2.04	1.02
Body	Nov 2			Alkaline					6.6	2.05	1.03	-0.299	2.20	1.10
Body	Nov 2	162.1	3	Li-ion	Leather Case & 3" Belt-Loop	Spkr-Mic	4.5 cm	5.5 cm	6.6	0.786	0.393	-0.184	0.856	0.428
Body	Nov 2	150.8	1	Li-ion	Metal Belt-Clip	Spkr-Mic	1.2 cm	2.0 cm	6.6	3.32	1.66	-0.208	3.48	1.74
Body	Nov 2	156.5	2						6.6	3.03	1.52	-0.216	3.18	1.59
Body	Nov 2	168.0	4						6.6	**P** 4.05	2.03	-0.184	**P** 4.23	**2.12**
										S 1.87	0.935	-0.126	**S** 1.93	0.965
Body	Nov 2	173.4	5						6.6	**P** 1.65	0.825	-0.830	**P** 2.00	1.00
										S 1.30	0.650	-0.830	**S** 1.57	0.787
Body	Nov 2	141.0	IC[1]						6.6	4.55	2.28	-0.326	4.90	2.45

Notes

1.	141.0 MHz tested as mid channel frequency for IC 138-144 MHz VHF Band.
2.	Secondary peak SAR levels measured within 2 dB of the primary are reported (P = Primary, S = Secondary).

9.0 MEASURED FLUID DIELECTRIC PARAMETERS

HEAD & BODY MEASURED FLUID DIELECTRIC PARAMETERS

140 MHz Head – Oct. 29				150 MHz Head – Oct. 29				160 MHz Head – Oct. 29				170 MHz Head – Oct. 29			
Dielectric Constant ε_r				Dielectric Constant ε_r				Dielectric Constant ε_r				Dielectric Constant ε_r			
150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.
52.3	**± 5%**	54.9	+5.0%	**52.3**	**± 5%**	54.5	+4.2%	**52.3**	**± 5%**	52.2	-0.2%	**52.3**	**± 5%**	53.4	+2.1%
Conductivity σ (mho/m)				Conductivity σ (mho/m)				Conductivity σ (mho/m)				Conductivity σ (mho/m)			
150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.
0.76	**± 5%**	0.77	+1.3%	**0.76**	**± 5%**	0.79	+4.0%	**0.76**	**± 5%**	0.79	+4.0%	**0.76**	**± 5%**	0.79	+4.0%
140 MHz Body – Nov. 02				**150 MHz Body – Nov. 02**				**160 MHz Body – Nov. 02**				**170 MHz Body – Nov. 02**			
Dielectric Constant ε_r				Dielectric Constant ε_r				Dielectric Constant ε_r				Dielectric Constant ε_r			
150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.
61.9	**± 5%**	61.6	-0.5%	**61.9**	**± 5%**	62.6	+1.1%	**61.9**	**± 5%**	60.9	-1.6%	**61.9**	**± 5%**	64.4	+4.1%
Conductivity σ (mho/m)				Conductivity σ (mho/m)				Conductivity σ (mho/m)				Conductivity σ (mho/m)			
150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.	150 Target		Meas.	Dev.
0.80	**± 5%**	0.76	-5.0%	**0.80**	**± 5%**	0.77	-3.8%	**0.80**	**± 5%**	0.77	-3.8%	**0.80**	**± 5%**	0.77	-3.8%

Test Date	Fluid Type	Ambient Temp.	Fluid Temp.	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m^3)
Oct. 29	150 Head	24.1°C	23.1°C	≥ 15 cm	101.1 kPa	35%	1000
Nov. 02	150 Body	23.8°C	22.2°C	≥ 15 cm	101.1 kPa	35%	1000

10.0 DETAILS OF SAR EVALUATION

1. The number of test frequencies and actual channels evaluated for SAR were selected in accordance with the number-of-test-frequencies formula for test frequency reduction prescribed by the FCC in KDB Inquiry Tracking No. 794297.
2. The DUT was evaluated in a face-held configuration with the front of the radio placed parallel to the outer surface of the planar phantom. A 2.5 cm spacing was maintained between the front side of the DUT and the outer surface of the planar phantom.
3. The DUT was evaluated in a body-worn configuration with the back of the radio facing the outer surface of the planar phantom as follows:

   a. "Baseline" evaluations were firstly evaluated to determine the highest SAR for each battery category without any body-worn or audio accessories connected, with an air-gap spacing of 1.2 cm between the back of the DUT and the planar phantom (smallest distance provided by any intended body-worn accessories used in the subsequent highest SAR search procedures) in accordance with the test reduction procedures prescribed by the FCC in KDB Inquiry Tracking No. 794297.

   b. The DUT was evaluated with the Metal Belt-Clip accessory attached the radio and the Metal Belt-Clip touching the planar phantom. The Metal Belt-Clip accessory provided a 1.2 cm spacing from the back of the DUT to the planar phantom. The Speaker-Microphone audio accessory was connected to the radio and keyed continuously for the duration of the SAR evaluations.

   c. The DUT was evaluated with the radio placed inside the Nylon Case (Window) accessory with the Nylon Shoulder Strap accessory attached. The DUT with Nylon Case (Window) and Shoulder Strap accessory was positioned with the back side touching the planar phantom. The Nylon Case (Window) accessory provided a 1.5 cm spacing from the back of the DUT to the planar phantom. The speaker-microphone audio accessory was connected to the radio and keyed continuously for the duration of the SAR evaluations.

   d. The DUT was evaluated with the radio placed inside the Leather Case (Full with D-Rings) accessory with the Leather Shoulder Strap accessory attached. The DUT with Leather Case (Full with D-Rings) and Shoulder Strap accessory was positioned with the back side touching the planar phantom. The Leather Case (Full with D-Rings) accessory provided a 1.5 cm spacing from the back of the DUT to the planar phantom. The speaker-microphone audio accessory was connected to the radio and keyed continuously for the duration of the SAR evaluations.

   e. The DUT was evaluated with the radio placed inside the Leather Case (Full) accessory with the Leather Swivel Belt-Loop accessory (3") attached. The DUT with Leather Case (Full) and Swivel Belt-Loop (3") accessory was positioned with the back side touching the planar phantom. The Leather Case (Full) and Swivel Belt-Loop accessory (3") provided a 4.5 cm spacing from the back of the DUT to the planar phantom. The speaker-microphone audio accessory was connected to the radio and keyed continuously for the duration of the SAR evaluations.
4. The conducted output power levels of the DUT referenced in this report were measured by Celltech Labs Inc. prior to the SAR evaluations at the antenna connector of the DUT using a Gigatronics 8652A Universal Power Meter in accordance with FCC 47 CFR §2.1046 and IC RSS-Gen.
5. The DUT was tested at the maximum output power level preset by the manufacturer in unmodulated continuous transmit operation (Continuous Wave mode at 100% duty cycle) with the transmit key constantly depressed. For a push-to-talk device the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base.
6. The area scan evaluation was performed with a fully charged battery pack. After the area scan was completed the radio was cooled down and the battery pack was replaced with a fully charged battery pack prior to the zoom scan evaluation.
7. A SAR-versus-Time power droop evaluation was performed for the test configuration with the maximum measured SAR droop. See Appendix A (SAR Test Plots) for SAR-versus-Time power droop evaluation plot.
8. The fluid temperature was measured prior to and after the SAR evaluations and the temperature remained within +/- 2°C of the fluid temperature reported during the dielectric parameter measurements.
9. The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).
10. SAR evaluation for simultaneous transmission of the VHF PTT and Bluetooth was not required in accordance with the test exclusion provision of FCC KDB 648474 Section 4 - the sum of the 1-g SAR measured for all simultaneous transmitting antennas is less than the SAR limit. The antenna-to-antenna separation distance is ~ 130 mm.

MAX. SAR - VHF BAND		MAX. SAR - BLUETOOTH	SUM OF 1-g SAR LEVELS	SAR LIMIT (Occupational)
Face	0.403 W/kg (1g)	0.114 W/kg (1g)	0.517 W/kg (1g)	8.0 W/kg (1g)
Body	2.12 W/kg (1g)	0	2.12 W/kg (1g)	8.0 W/kg (1g)

11.0 SAR EVALUATION PROCEDURES

a. (i) The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated using the SAM phantom.
(ii) For body-worn and face-held devices a planar phantom was used.

b. The SAR was determined by a pre-defined procedure within the DASY4 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 15mm x 15mm.
An area scan was determined as follows:

c. Based on the defined area scan grid, a more detailed grid is created to increase the points by a factor of 10. The interpolation function then evaluates all field values between corresponding measurement points.

d. A linear search is applied to find all the candidate maxima. Subsequently, all maxima are removed that are >2 dB from the global maximum. The remaining maxima are then used to position the cube scans.
A 1g and 10g spatial peak SAR was determined as follows:

e. Extrapolation is used to find the points between the dipole center of the probe and the surface of the phantom. This data cannot be measured, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.4 mm (see probe calibration document in Appendix F). The extrapolation was based on trivariate quadratics computed from the previously calculated 3D interpolated points nearest the phantom surface.

f. Interpolated data is used to calculate the average SAR over 1g and 10g cubes by spatially discretizing the entire measured cube. The volume used to determine the averaged SAR is a 1mm grid (42875 interpolated points).

g. A zoom scan volume of 32 mm x 32 mm x 30 mm (5 x 5 x 7 points) centered at the peak SAR location determined from the area scan is used for all zoom scans for devices with a transmit frequency < 800 MHz. Zoom scans for frequencies ≥ 800 MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7 x 7 x 7) to ensure complete capture of the peak spatial-average SAR.

12.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations daily system checks were performed using a Plexiglas planar phantom and 300 MHz dipole (see Appendix B for system performance check test plots) in accordance with the procedures described in IEEE Standard 1528-2003 (see reference [5]). The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer (see Appendix C for measured fluid dielectric parameters). A forward power of 250 mW was applied to the dipole and the system was verified to a tolerance of ±10% from the system validation target SAR value (see Appendix E for system validation target SAR value listed on page 10 of the dipole calibration report).

SYSTEM PERFORMANCE CHECK EVALUATIONS

Test Date	Equiv. Tissue	SAR 1g (W/kg)			Dielectric Constant ε_r			Conductivity σ (mho/m)			ρ (Kg/m^3)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
	300 MHz	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.	Sys. Val. Target	Meas.	Dev.						
Oct 29	Head	0.760 ±10%	0.768	+1.1%	44.9 ±5%	45.2	+0.7%	0.85 ±5%	0.89	+4.7%	1000	24.1	23.1	≥ 15	35	101.1
Nov 02			0.761	+0.1%		46.4	+3.3%		0.89	+4.7%	1000	23.5	22.5	≥ 15	35	101.1

Notes		
	1.	The target SAR value is referenced from the System Validation performed by Celltech Labs Inc. (see Appendix E).
	2.	The target dielectric parameters are referenced from the System Validation performed by Celltech Labs Inc. (see Appendix E).
	3.	The fluid temperature was measured prior to and after the system performance check to ensure the temperature remained within +/-2°C of the fluid temperature reported during the dielectric parameter measurements.
	4.	The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).

13.0 SIMULATED EQUIVALENT TISSUES

The simulated equivalent tissue recipes in the table below are derived from the SAR system manufacturer's suggested recipes in the DASY4 manual (see references [11] and [12]) in accordance with the procedures and requirements specified in IEEE Standard 1528-2003 (see reference [5]) and IEC Standard 62209-1:2005 (see reference [6]). The ingredient percentage may have been adjusted minimally in order to achieve the appropriate target dielectric parameters within the specified tolerance.

SIMULATED TISSUE MIXTURES							
INGREDIENT	Water	**300 MHz Head Tissue Mixture**	37.56 %	**150 MHz Head Tissue Mixture**	38.35 %	**150 MHz Body Tissue Mixture**	46.6 %
	Sugar		55.32 %		55.5%		49.7 %
	Salt		5.95 %		5.15%		2.6 %
	HEC		0.98 %		0.9%		1.0 %
	Bactericide		0.19 %		0.1%		0.1 %

14.0 SAR LIMITS

SAR RF EXPOSURE LIMITS			
FCC 47 CFR 2.1093	**Health Canada Safety Code 6**	**(General Population / Uncontrolled Exposure)**	**(Occupational / Controlled Exposure)**
Spatial Average (averaged over the whole body)		0.08 W/kg	0.4 W/kg
Spatial Peak (averaged over any 1 g of tissue)		1.6 W/kg	**8.0 W/kg**
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)		4.0 W/kg	20.0 W/kg
The Spatial Average value of the SAR averaged over the whole body.			
The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.			
Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.			

15.0 ROBOT SYSTEM SPECIFICATIONS

Specifications	
Positioner	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability	0.02 mm
No. of axis	6
Data Acquisition Electronic (DAE) System	
Cell Controller	
Processor	AMD Athlon XP 2400+
Clock Speed	2.0 GHz
Operating System	Windows XP Professional
Data Converter	
Features	Signal Amplifier, multiplexer, A/D converter, and control logic
Software	Measurement Software: DASY4, V4.7 Build 44
	Postprocessing Software: SEMCAD, V1.8 Build 171
Connecting Lines	Optical downlink for data and status info., Optical uplink for commands and clock
DASY4 Measurement Server	
Function	Real-time data evaluation for field measurements and surface detection
Hardware	PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM
Connections	COM1, COM2, DAE, Robot, Ethernet, Service Interface
E-Field Probe	
Model	ET3DV6
Serial No.	1590
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
Evaluation Phantom	
Type	Side Planar Phantom
Shell Material	Plexiglas
Bottom Thickness	2.0 mm ± 0.1 mm
Inner Dimensions	72.6 cm (L) x 20.3 cm (W) x 20.3 cm (H)
Validation Phantom (≤ 450MHz)	
Type	Planar Phantom
Shell Material	Plexiglas
Bottom Thickness	6 mm ± 0.1 mm
Inner Dimensions	83.5 cm (L) x 36.9 cm (W) x 21.8 cm (H)

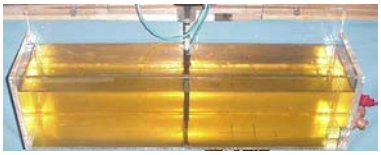
16.0 PROBE SPECIFICATION (ET3DV6)

Construction:	Symmetrical design with triangular core; Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, glycol)
Calibration:	In air from 10 MHz to 2.5 GHz In head simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy ± 8%)
Frequency:	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Directivity:	± 0.2 dB in head tissue (rotation around probe axis) ± 0.4 dB in head tissue (rotation normal to probe axis)
Dynamic Range:	5 μW/g to > 100 mW/g; Linearity: ± 0.2 dB
Surface Detect:	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions:	Overall length: 330 mm; Tip length: 16 mm; Body diameter: 12 mm; Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application:	General dosimetry up to 3 GHz; Compliance tests of mobile phone

ET3DV6 E-Field Probe

17.0 SIDE PLANAR PHANTOM

The side planar phantom is constructed of Plexiglas material with a 2.0 mm shell thickness for face-held and body-worn SAR evaluations of portable radio transceivers. The side planar phantom is mounted on the side of the DASY4 compact system table.



Plexiglas Side Planar Phantom

18.0 VALIDATION PLANAR PHANTOM

The validation planar phantom is constructed of Plexiglas material with a 6.0 mm shell thickness for system validations at 450MHz and below. The validation planar phantom is mounted to the table of the DASY4 compact system.

Plexiglas Validation Planar Phantom

19.0 DEVICE HOLDER

The DASY4 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

Device Holder

20.0 TEST EQUIPMENT LIST

TEST EQUIPMENT		ASSET NO.	SERIAL NO.	DATE CALIBRATED	CALIBRATION DUE DATE
USED	DESCRIPTION				
x	Schmid & Partner DASY4 System	-	-	-	-
x	-DASY4 Measurement Server	00158	1078	CNR	CNR
x	-Robot	00046	599396-01	CNR	CNR
x	-DAE4	00019	353	28Apr09	28Apr10
x	-ET3DV6 E-Field Probe	00017	1590	16Jul09	16Jul10
x	-Celltech 300 MHz Validation Dipole	00023	135	26Jan09	26Jan10
x	-Plexiglas Side Planar Phantom	00156	161	CNR	CNR
x	-Plexiglas Validation Planar Phantom	00157	137	CNR	CNR
x	HP 85070C Dielectric Probe Kit	00033	US39240170	CNR	CNR
x	HP E4408B Spectrum Analyzer	00015	US39240170	23Apr08	28Apr10
x	Gigatronics 8652A Power Meter	00007	1835272	23Apr08	28Apr10
x	Gigatronics 80701A Power Sensor	00014	1833699	23Apr08	28Apr10
x	HP 8753ET Network Analyzer	00134	US39170292	28Apr08	28Apr10
x	Rohde & Schwarz SMR20 Signal Generator	00006	100104	CNR	CNR
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	CNR	CNR
Abbr.	CNR = Calibration Not Required				

21.0 MEASUREMENT UNCERTAINTIES

UNCERTAINTY BUDGET FOR DEVICE EVALUATION

Uncertainty Component	IEEE 1528 Section	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	ci 10g	Uncertainty Value ±% (1g)	Uncertainty Value ±% (10g)	V_i or V_{eff}
Measurement System									
Probe Calibration (150 MHz)	E.2.1	10.0	Normal	1	1	1	10.0	10	∞
Axial Isotropy	E.2.2	4.7	Rectangular	1.732050808	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	Rectangular	1.732050808	0.7	0.7	3.9	3.9	∞
Boundary Effect	E.2.3	2.5	Rectangular	1.732050808	1	1	1.4	1.4	∞
Linearity	E.2.4	4.7	Rectangular	1.732050808	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	Rectangular	1.732050808	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	Rectangular	1.732050808	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3	Rectangular	1.732050808	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	Rectangular	1.732050808	1	1	0.2	0.2	∞
Probe Positioning wrt Phantom Shell	E.6.3	2.9	Rectangular	1.732050808	1	1	1.7	1.7	∞
Extrapolation, interpolation & integration algorithms for max. SAR evaluation	E.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	2.9	Normal	1	1	1	2.9	2.9	12
Device Holder Uncertainty	E.4.1	3.6	Normal	1	1	1	3.6	3.6	8
SAR Drift Measurement	6.6.2	5	Rectangular	1.732050808	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4	Rectangular	1.732050808	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5	Rectangular	1.732050808	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measured)	E.3.3	5	Normal	1	0.64	0.43	3.2	2.2	∞
Liquid Permittivity (target)	E.3.2	5	Rectangular	1.732050808	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measured)	E.3.3	5	Normal	1	0.6	0.49	3.0	2.5	∞
Combined Standard Uncertainty			**RSS**				**14.07**	**13.65**	
Expanded Uncertainty (95% Confidence Interval)			**k=2**				**28.13**	**27.31**	

Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003

22.0 REFERENCES

[1] Federal Communications Commission - “Radiofrequency radiation exposure evaluation: portable devices”, Rule Part 47 CFR §2.1093.

[2] Health Canada - “Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz”, Safety Code 6: 1999.

[3] Federal Communications Commission - “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.

[4] Industry Canada - “Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)”, Radio Standards Specification RSS-102 Issue 3: June 2009.

[5] IEEE Standard 1528-2003 - “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”: December 2003.

[6] IEC International Standard 62209-1:2005 - “Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures.”

[7] International Standard IEC 62209-2 Draft (106-62209-2-CDV_090323) - “Human exposure to radio frequency fields from hand-held & body-mounted wireless comm. devices - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (30 MHz to 6 GHz)”.

[8] Federal Communications Commission, Office of Engineering and Technology - “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”; KDB 447498 D01v04: November 2009.

[9] Federal Communications Commission, Office of Engineering and Technology - “Application Note: SAR Probe Calibration and System Verification Considerations for Measurements at 150 MHz - 3 GHz”; KDB 450824 D01 v01r01: January 2007.

[10] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 21 Application Note, SAR Sensitivities: Sept. 2005.

[11] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 16 Application Note, Head Tissue Recipe: Sept. 2005.

[12] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 17 Application Note, Body Tissue Recipe: Sept. 2005.

APPENDIX A - SAR MEASUREMENT DATA

Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 162.1 MHz

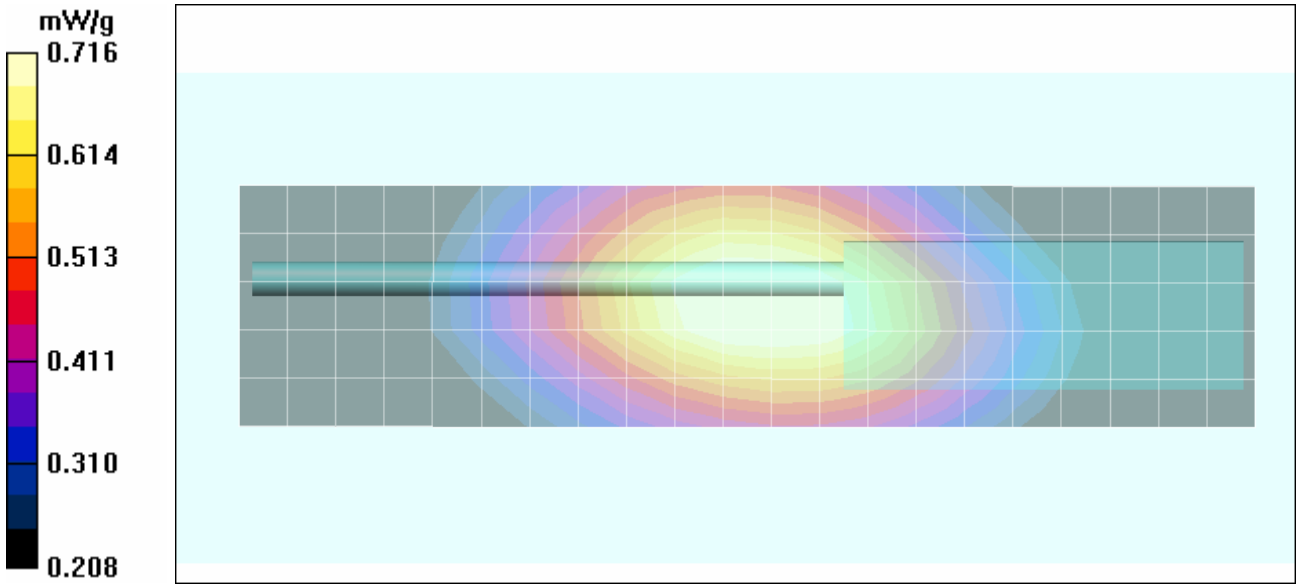
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

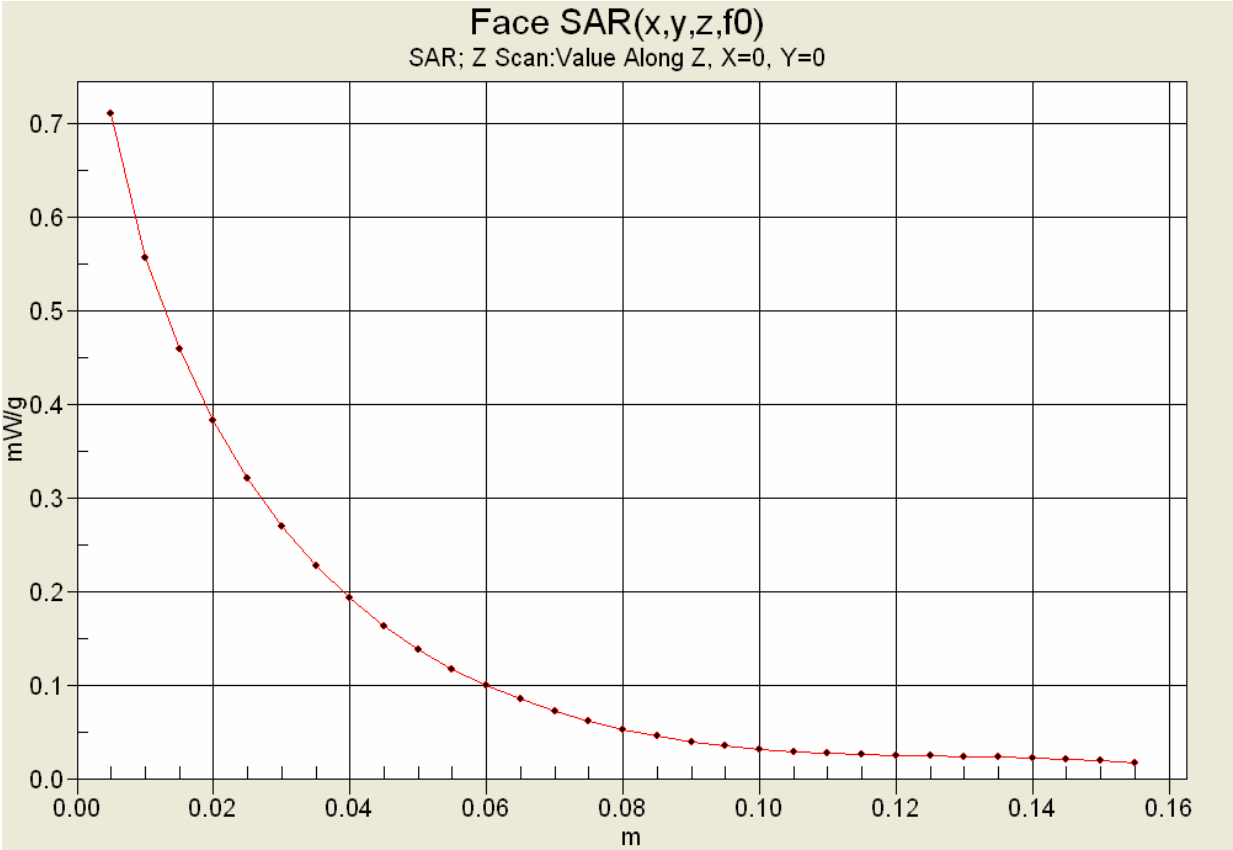
Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 162.1 MHz; σ = 0.79 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.739 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 29.4 V/m; Power Drift = -0.132 dB
Peak SAR (extrapolated) = 0.985 W/kg
SAR(1 g) = 0.734 mW/g; SAR(10 g) = 0.579 mW/g
Maximum value of SAR (measured) = 0.716 mW/g



Z-Axis Scan



Date Tested: 10/29/2009

Face-held SAR - Alkaline Battery Case - 162.1 MHz

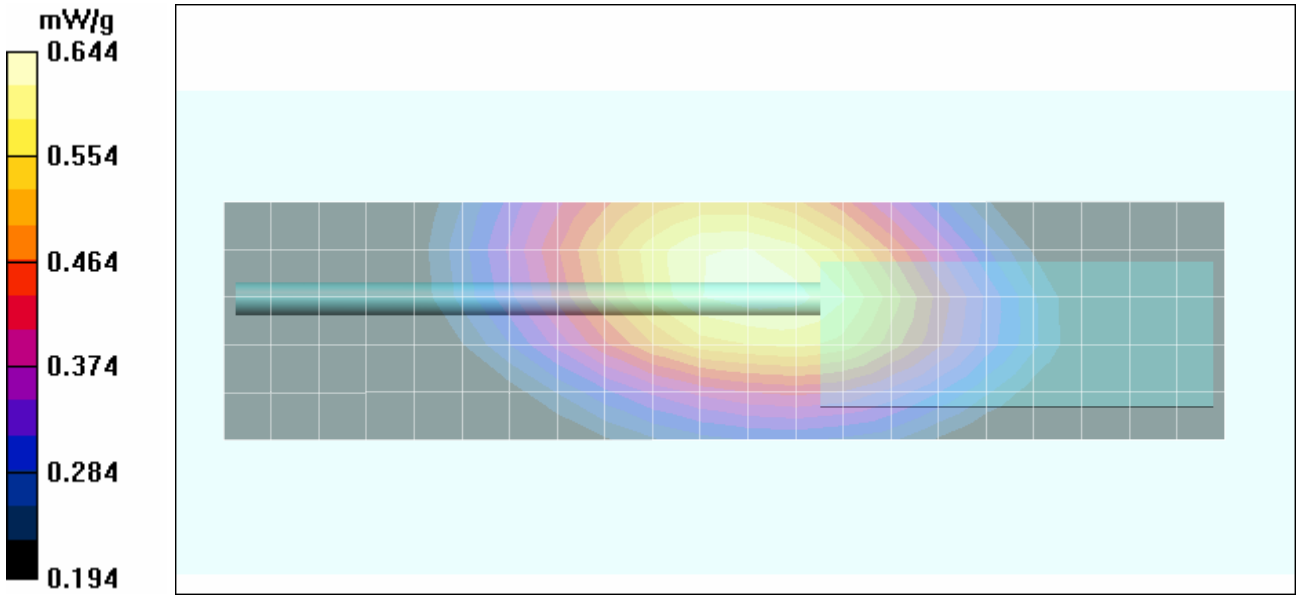
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 162.1 MHz; σ = 0.79 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.632 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = -0.961 dB
Peak SAR (extrapolated) = 0.858 W/kg
SAR(1 g) = 0.645 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 0.644 mW/g



Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 150.8 MHz

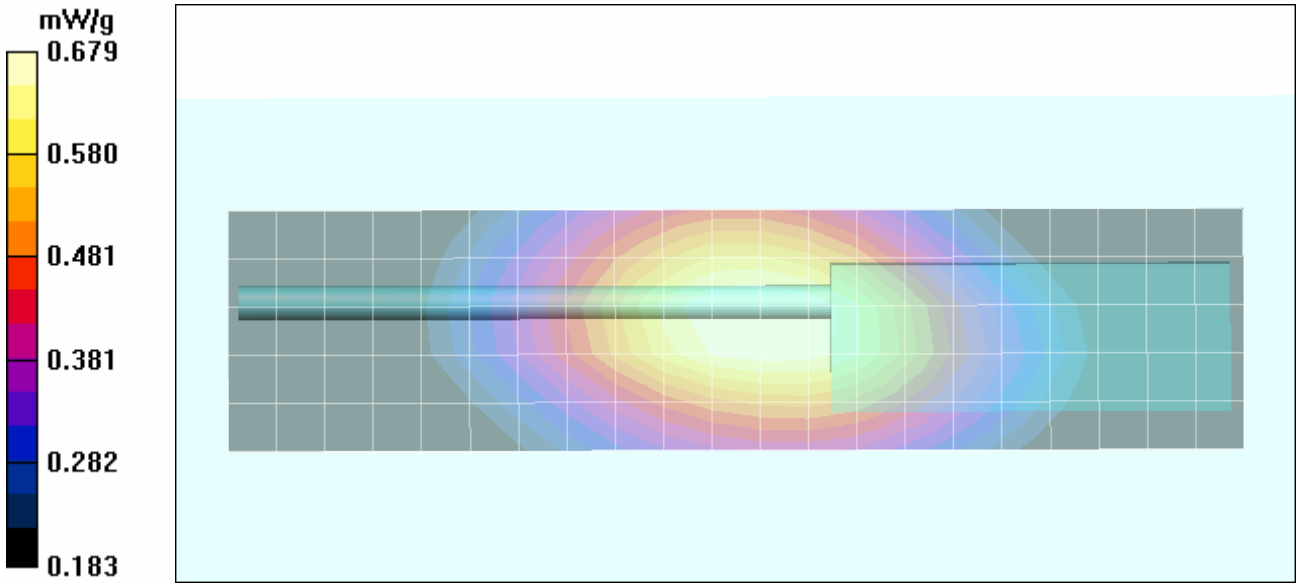
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 150.8 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 150.8 MHz; σ = 0.79 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.693 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 28.8 V/m; Power Drift = -0.163 dB
Peak SAR (extrapolated) = 0.950 W/kg
SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.539 mW/g
Maximum value of SAR (measured) = 0.679 mW/g



Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 156.5 MHz

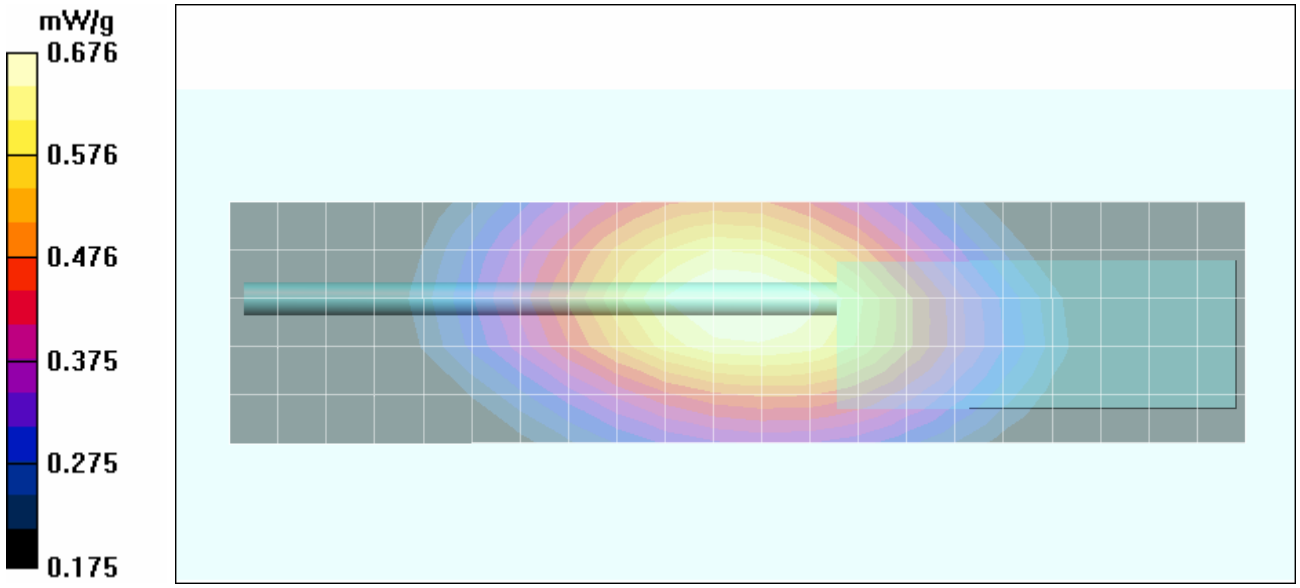
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 156.5 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 156.5 MHz; σ = 0.79 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.691 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 27.9 V/m; Power Drift = -0.110 dB
Peak SAR (extrapolated) = 0.949 W/kg
SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.536 mW/g
Maximum value of SAR (measured) = 0.676 mW/g



Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 168.0 MHz

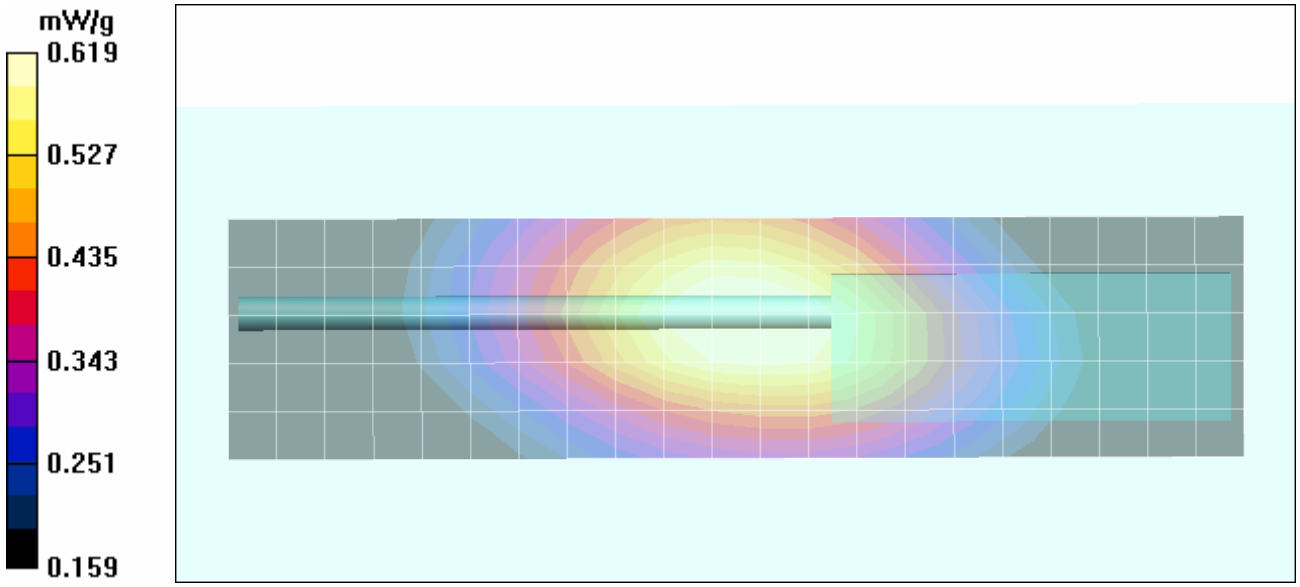
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 168 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 168 MHz; σ = 0.79 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.646 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 27.1 V/m; Power Drift = -0.194 dB
Peak SAR (extrapolated) = 0.866 W/kg
SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.491 mW/g
Maximum value of SAR (measured) = 0.619 mW/g



Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 173.4 MHz

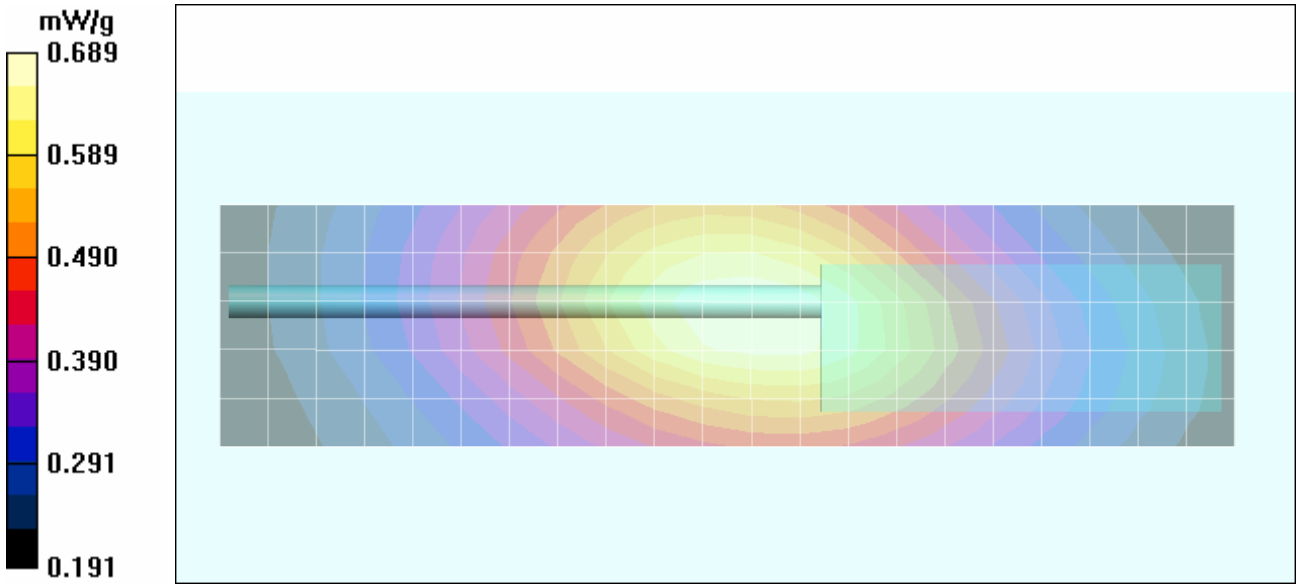
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 173.4 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 173.4 MHz; σ = 0.79 mho/m; ε_r = 53.4; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.624 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 29.2 V/m; Power Drift = -0.401 dB
Peak SAR (extrapolated) = 0.958 W/kg
SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.551 mW/g
Maximum value of SAR (measured) = 0.689 mW/g



Date Tested: 10/29/2009

Face-held SAR - Lithium-ion Battery Pack - 141.0 MHz (IC Mid Channel Freq. Band 138-144 MHz)

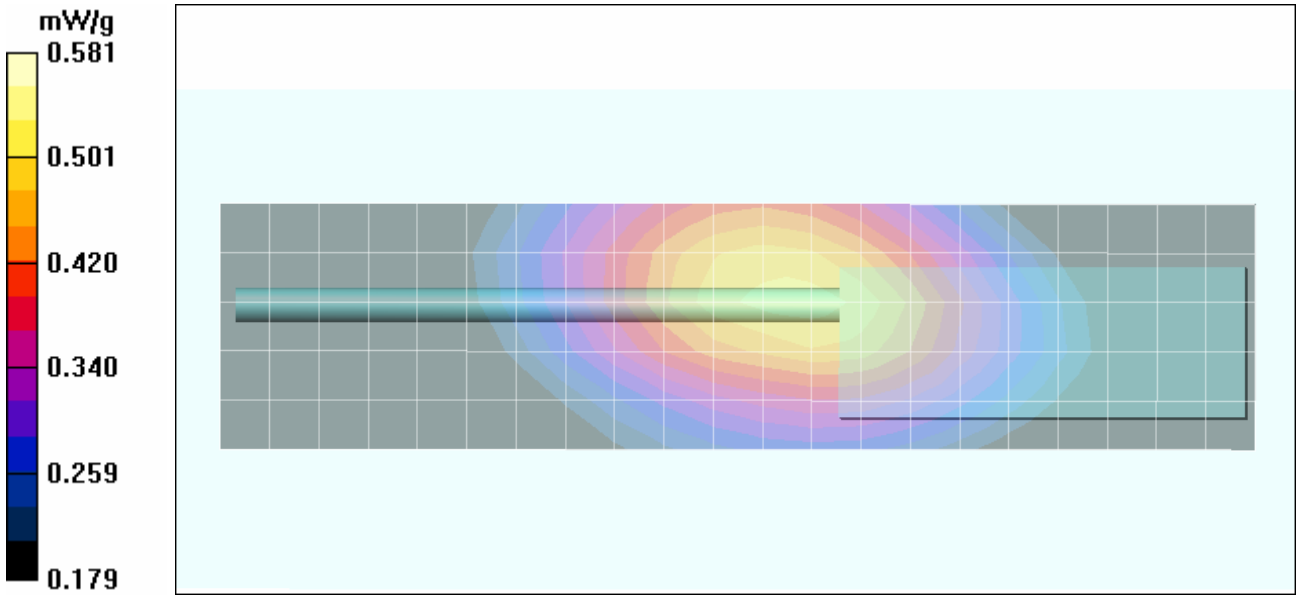
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 141.0 MHz; Duty Cycle: 1:1
Medium: HSL150 Medium parameters used: f = 141.0 MHz; σ = 0.77 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(9.2, 9.2, 9.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Face-held SAR - 2.5 cm Spacing from Front of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.516 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 27.6 V/m; Power Drift = -0.393 dB
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.477 mW/g
Maximum value of SAR (measured) = 0.581 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 162.1 MHz - Battery "Baseline" Highest SAR Search

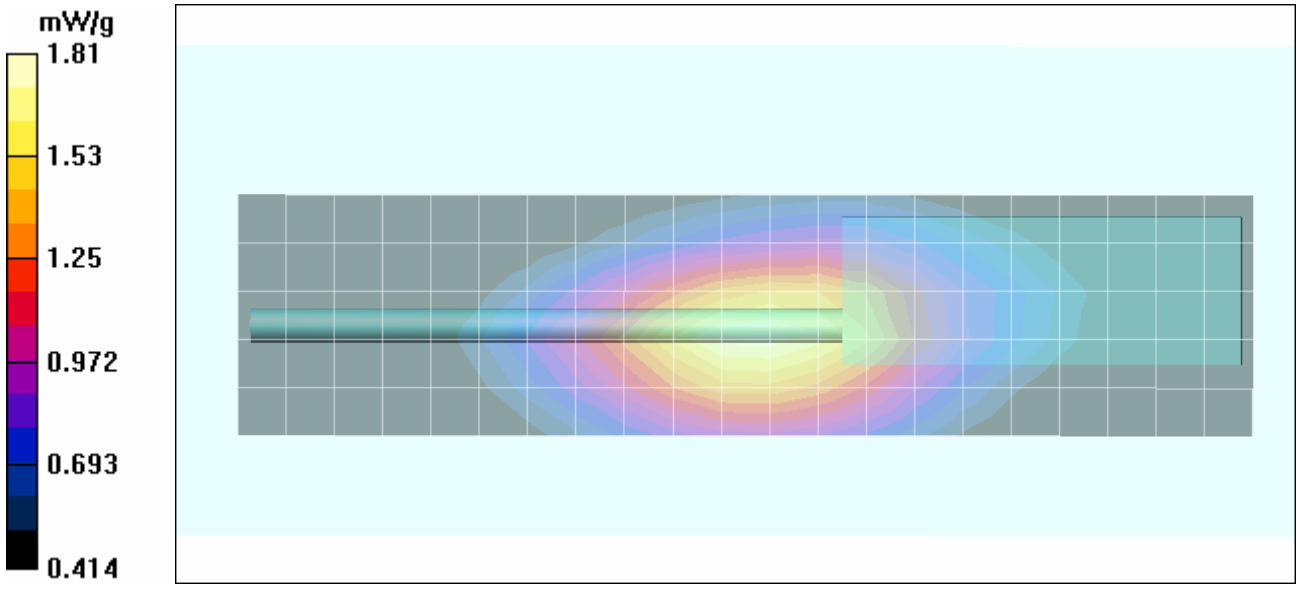
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Air-Gap Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 1.77 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 43.2 V/m; Power Drift = -0.181 dB
Peak SAR (extrapolated) = 2.64 W/kg
SAR(1 g) = 1.86 mW/g; SAR(10 g) = 1.39 mW/g
Maximum value of SAR (measured) = 1.81 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Alkaline Battery Case - 162.1 MHz - Battery "Baseline" Highest SAR Search

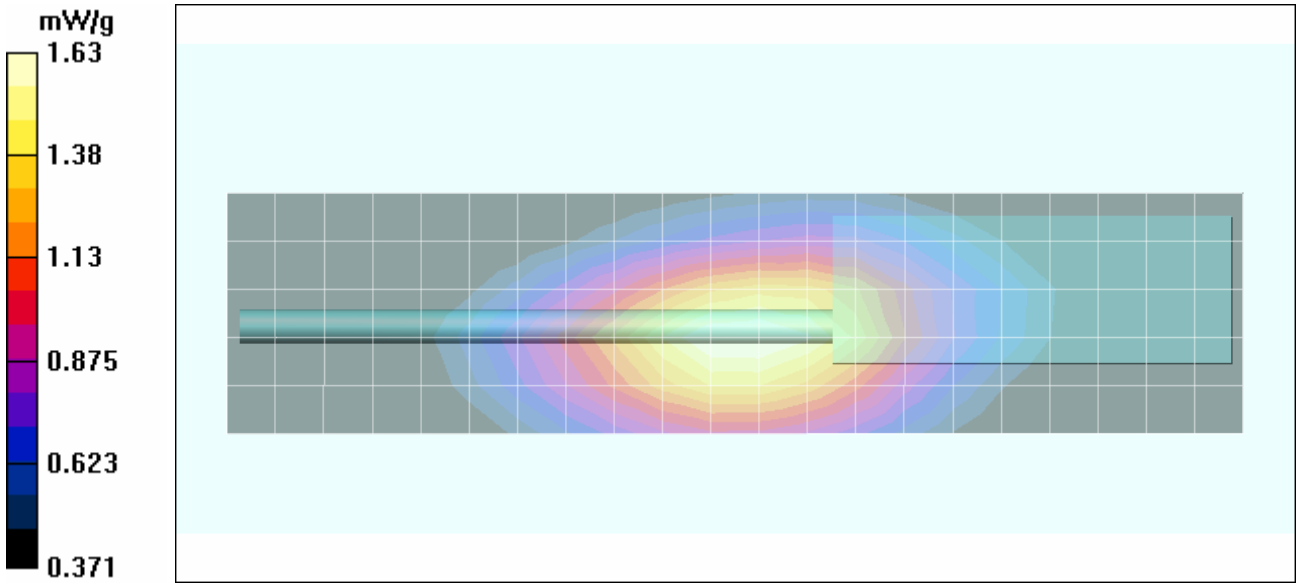
DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Air-Gap Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 1.67 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 40.9 V/m; Power Drift = -0.309 dB
Peak SAR (extrapolated) = 2.35 W/kg
SAR(1 g) = 1.67 mW/g; SAR(10 g) = 1.25 mW/g
Maximum value of SAR (measured) = 1.63 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

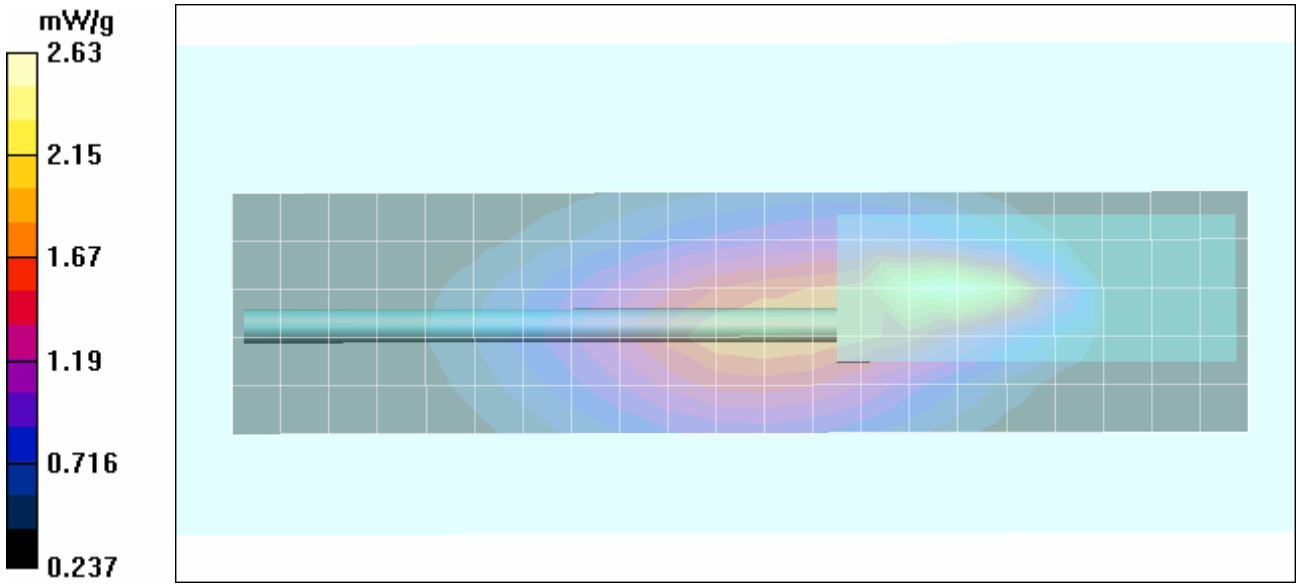
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.51 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 46.6 V/m; Power Drift = -0.165 dB
Peak SAR (extrapolated) = 6.48 W/kg
SAR(1 g) = 2.93 mW/g; SAR(10 g) = 1.75 mW/g
Maximum value of SAR (measured) = 2.63 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 45.9 V/m; Power Drift = -0.099 dB
Peak SAR (extrapolated) = 2.68 W/kg
SAR(1 g) = 1.93 mW/g; SAR(10 g) = 1.46 mW/g
Maximum value of SAR (measured) = 1.88 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Alkaline Battery Case - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

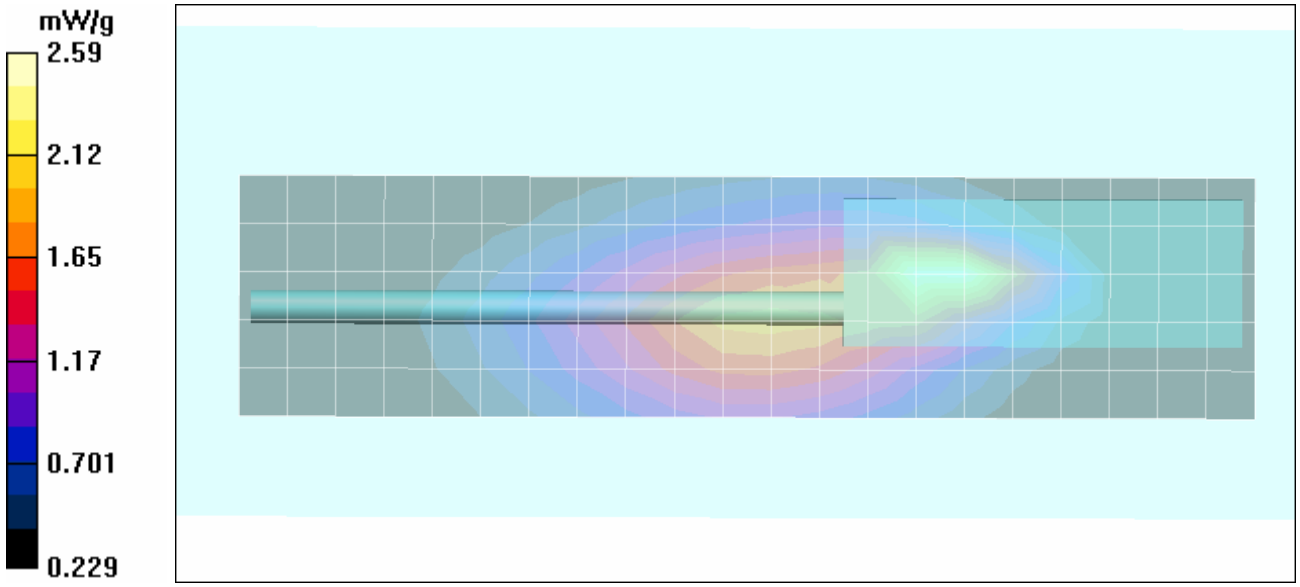
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.52 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 46.9 V/m; Power Drift = -0.284 dB
Peak SAR (extrapolated) = 6.59 W/kg
SAR(1 g) = 2.86 mW/g; SAR(10 g) = 1.7 mW/g
Maximum value of SAR (measured) = 2.59 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.2 V/m; Power Drift = -0.429 dB
Peak SAR (extrapolated) = 2.76 W/kg
SAR(1 g) = 1.96 mW/g; SAR(10 g) = 1.46 mW/g
Maximum value of SAR (measured) = 1.90 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

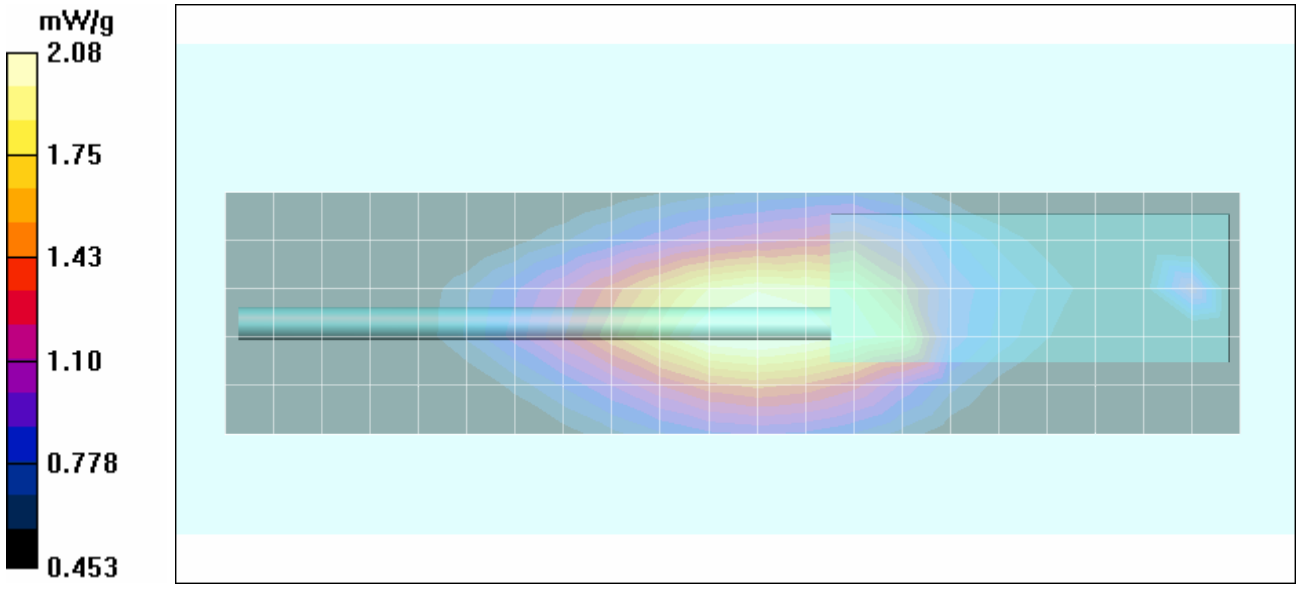
Body-worn Accessory: Nylon Case (Window) & Shoulder Strap; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Nylon Case Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.16 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.7 V/m; Power Drift = -0.169 dB
Peak SAR (extrapolated) = 3.09 W/kg
SAR(1 g) = 2.15 mW/g; SAR(10 g) = 1.59 mW/g
Maximum value of SAR (measured) = 2.08 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 47.9 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 3.09 W/kg
SAR(1 g) = 1.89 mW/g; SAR(10 g) = 1.28 mW/g
Maximum value of SAR (measured) = 1.83 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Alkaline Battery Case - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

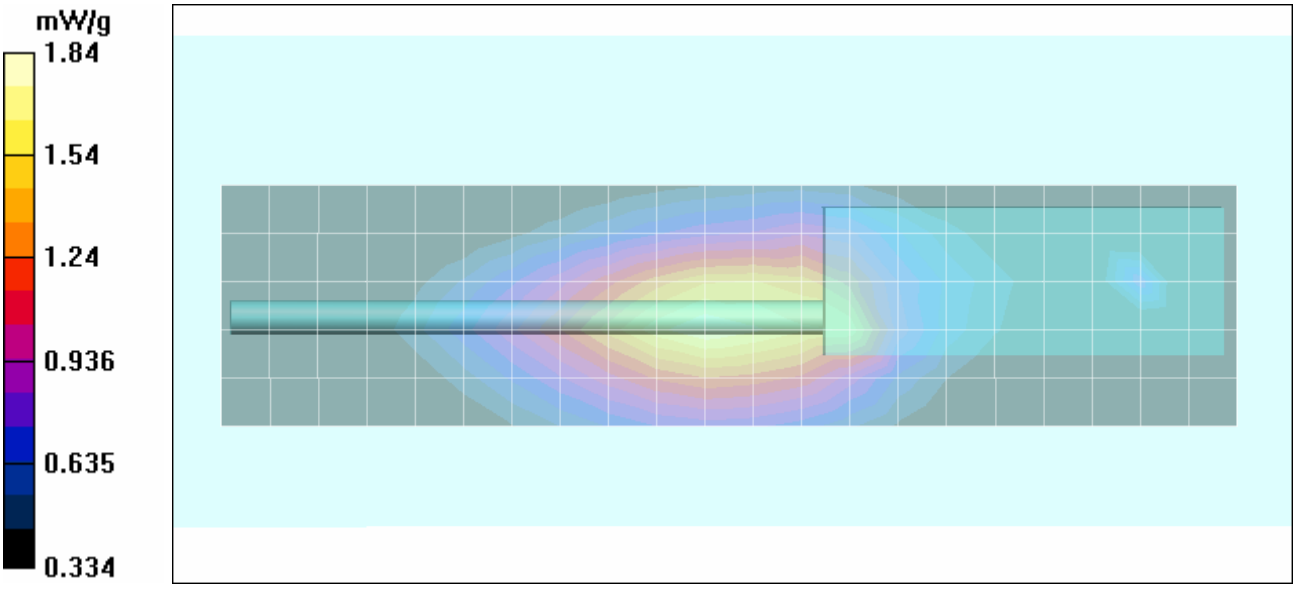
Body-worn Accessory: Nylon Case (Window) & Shoulder Strap; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

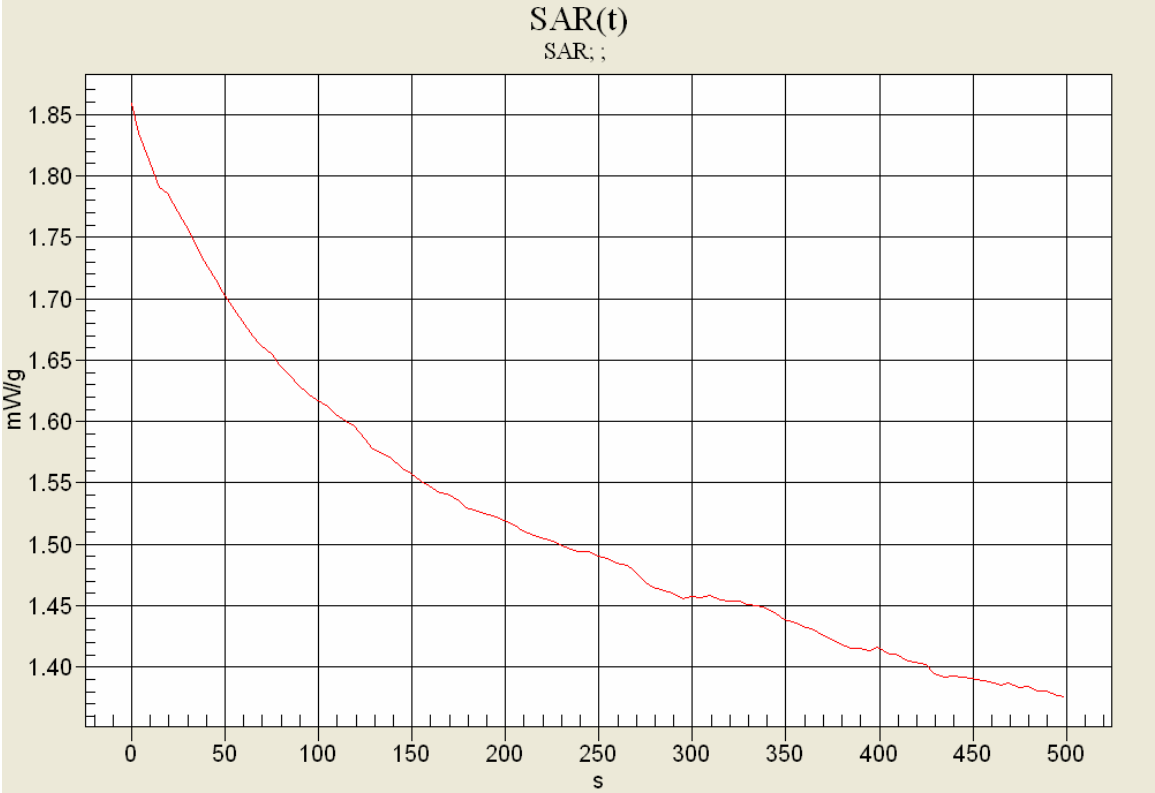
Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Nylon Case Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 1.75 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 45.3 V/m; Power Drift = -0.779 dB
Peak SAR (extrapolated) = 2.71 W/kg
SAR(1 g) = 1.88 mW/g; SAR(10 g) = 1.39 mW/g
Maximum value of SAR (measured) = 1.84 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 44.7 V/m; Power Drift = -1.48 dB
Peak SAR (extrapolated) = 2.97 W/kg
SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.968 mW/g
Maximum value of SAR (measured) = 1.36 mW/g



SAR-versus-Time Droop Evaluation
Body-worn Configuration
162.1 MHz; Alkaline Batt.
Nylon Case accessory



0s	1.85		start
340s	1.45	-1.06 dB	zoom scan
500s	1.37	-1.30 dB	area scan

Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

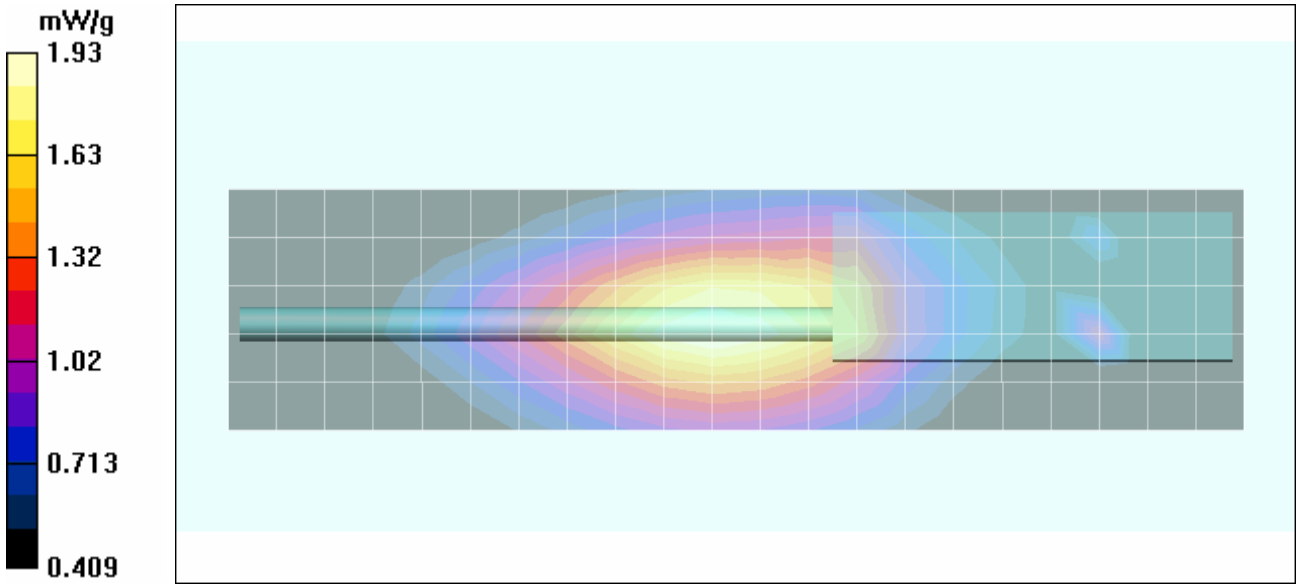
Body-worn Accessory: Leather Case (Full) & Shoulder Strap; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Leather Case Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.00 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 45.2 V/m; Power Drift = -0.115 dB
Peak SAR (extrapolated) = 2.86 W/kg
SAR(1 g) = 1.99 mW/g; SAR(10 g) = 1.47 mW/g
Maximum value of SAR (measured) = 1.93 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Alkaline Battery Case - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

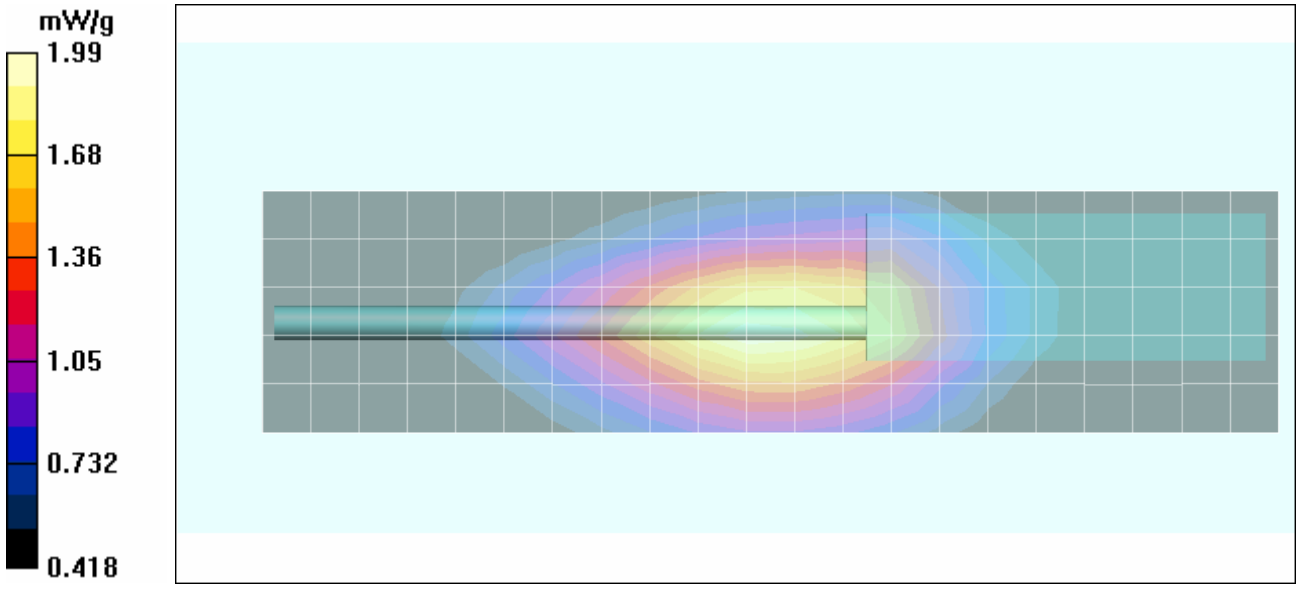
Body-worn Accessory: Leather Case (Full) & Shoulder Strap; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.5 cm Leather Case Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 1.97 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 43.8 V/m; Power Drift = -0.299 dB
Peak SAR (extrapolated) = 2.91 W/kg
SAR(1 g) = 2.05 mW/g; SAR(10 g) = 1.51 mW/g
Maximum value of SAR (measured) = 1.99 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 162.1 MHz - B-w Accessory Highest SAR Search

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

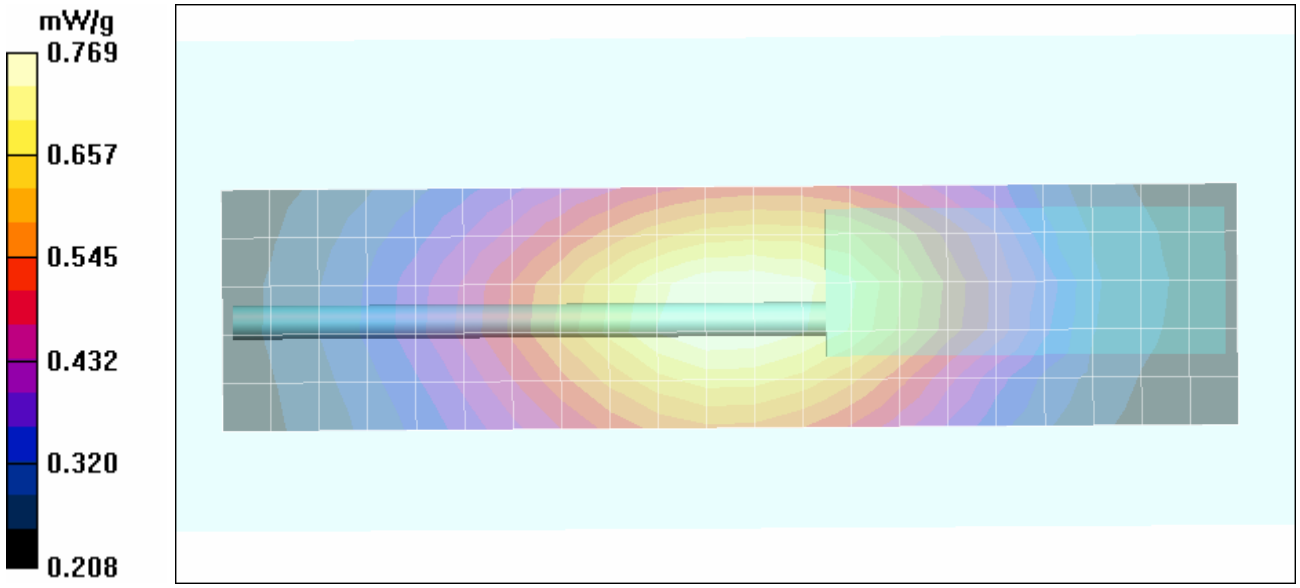
Body-worn Accessory: Leather Case (Full) & Swivel Belt-Loop (3") ; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 162.1 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 162.1 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 4.5 cm Leather Case & Swivel Belt-Loop Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 0.873 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 30.1 V/m; Power Drift = -0.184 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.616 mW/g
Maximum value of SAR (measured) = 0.769 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 150.8 MHz - Highest SAR Battery & B-w Accessory

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

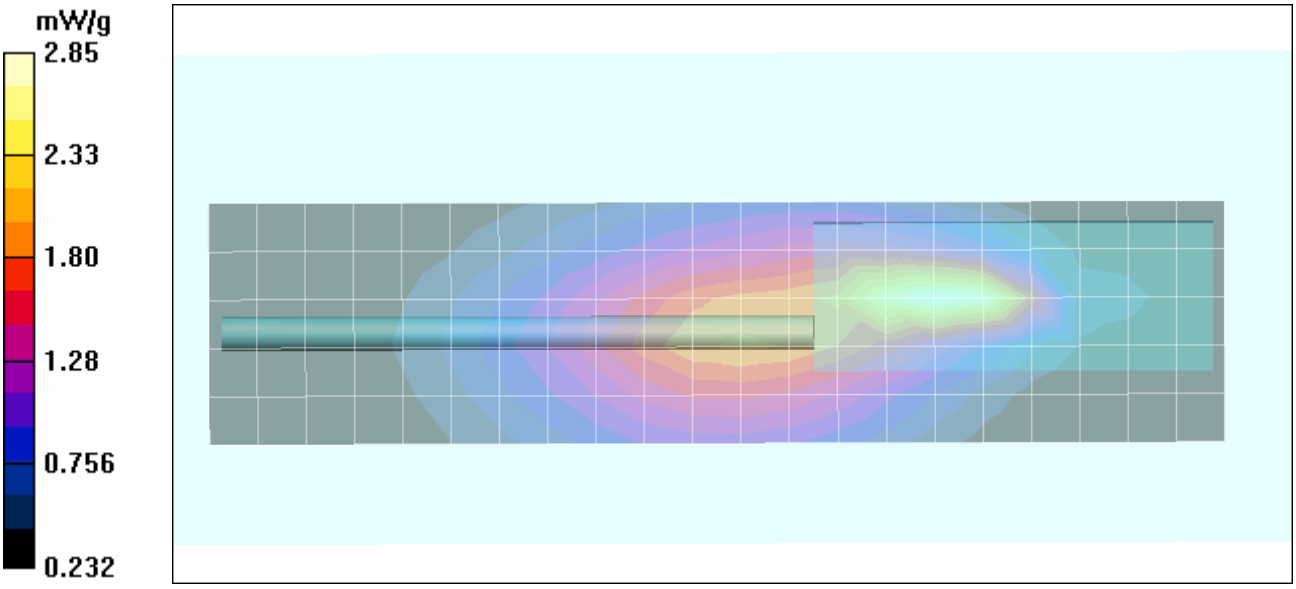
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 150.8 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 150.8 MHz; σ = 0.77 mho/m; ε_r = 62.6; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.88 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 51.6 V/m; Power Drift = -0.208 dB
Peak SAR (extrapolated) = 9.22 W/kg
SAR(1 g) = 3.32 mW/g; SAR(10 g) = 1.79 mW/g
Maximum value of SAR (measured) = 2.85 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 156.5 MHz - Highest SAR Battery & B-w Accessory

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

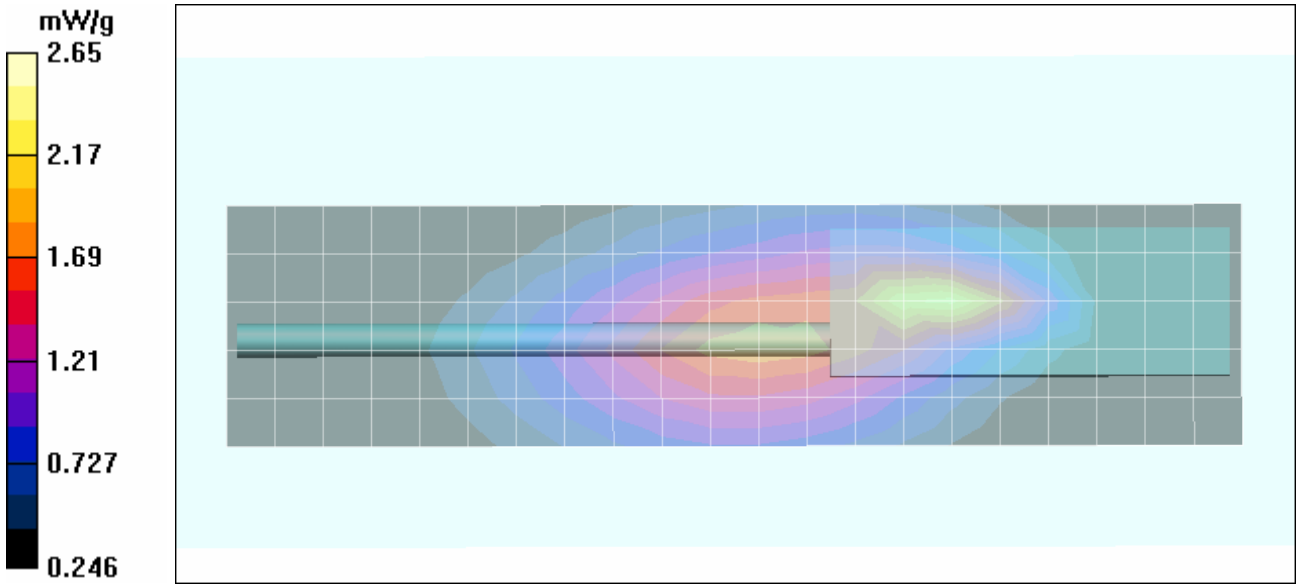
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 156.5 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 156.5 MHz; σ = 0.77 mho/m; ε_r = 60.9; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.24 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 48.2 V/m; Power Drift = -0.216 dB
Peak SAR (extrapolated) = 7.51 W/kg
SAR(1 g) = 3.03 mW/g; SAR(10 g) = 1.69 mW/g
Maximum value of SAR (measured) = 2.65 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 168.0 MHz - Highest SAR Battery & B-w Accessory

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

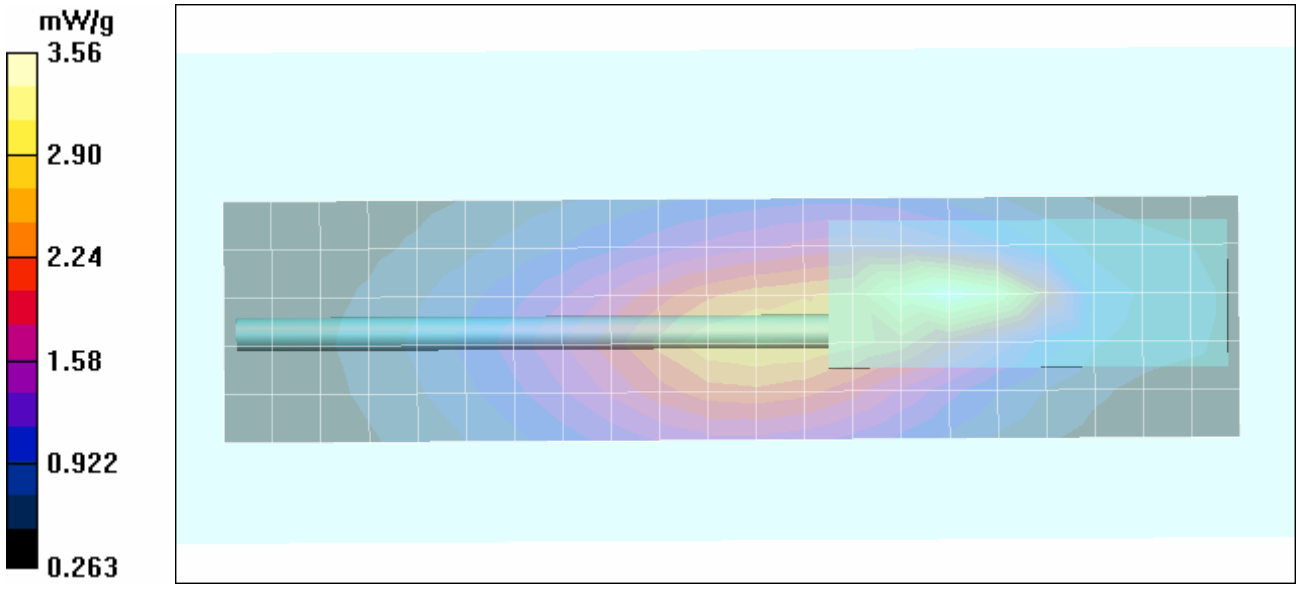
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

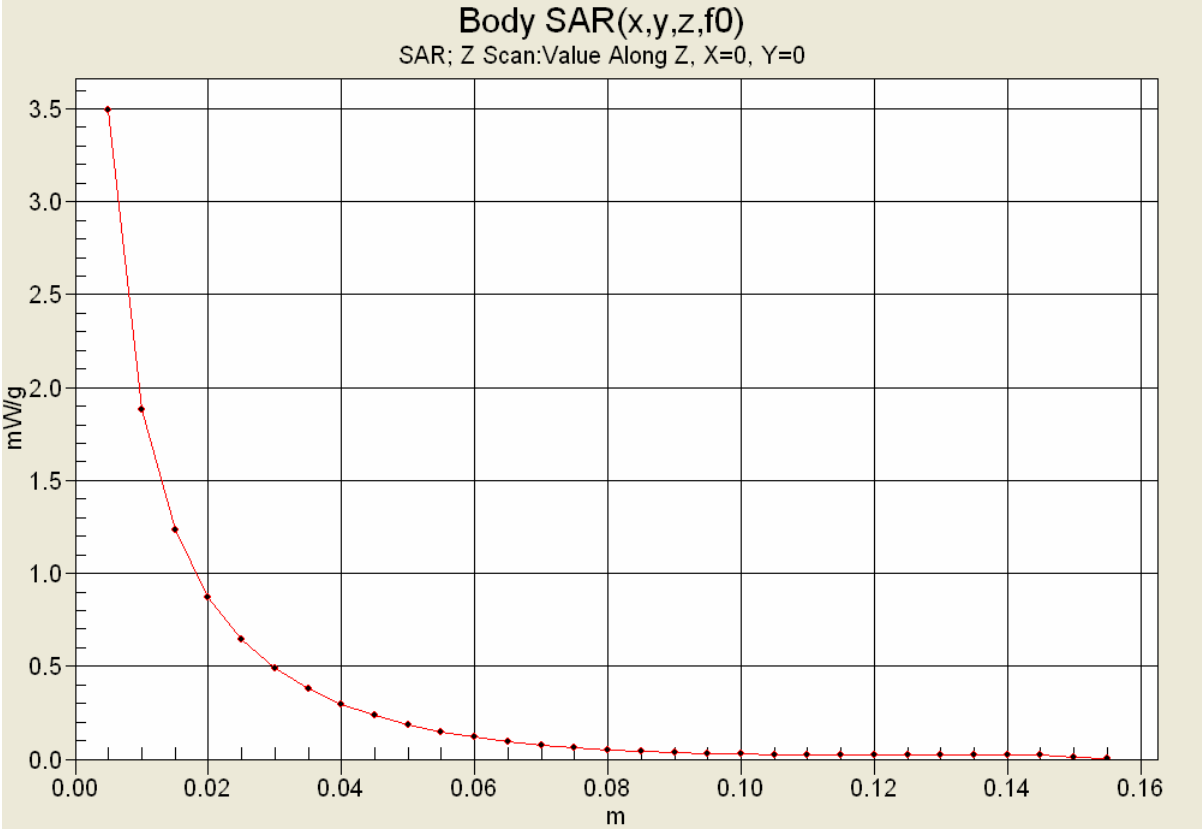
Communication System: CW
Frequency: 168 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 168 MHz; σ = 0.77 mho/m; ε_r = 64.4; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.42 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 47.7 V/m; Power Drift = -0.184 dB
Peak SAR (extrapolated) = 10.4 W/kg
SAR(1 g) = 4.05 mW/g; SAR(10 g) = 2.24 mW/g
Maximum value of SAR (measured) = 3.56 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 46.5 V/m; Power Drift = -0.126 dB
Peak SAR (extrapolated) = 2.60 W/kg
SAR(1 g) = 1.87 mW/g; SAR(10 g) = 1.42 mW/g
Maximum value of SAR (measured) = 1.83 mW/g



Z-Axis Scan



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 173.4 MHz - Highest SAR Battery & B-w Accessory

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

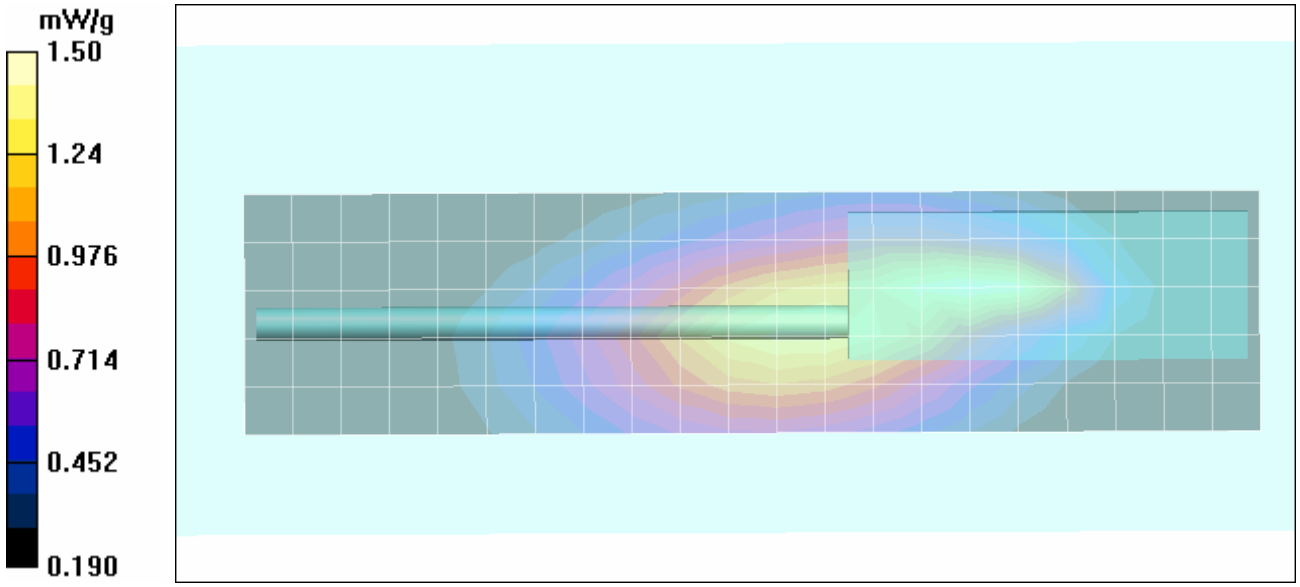
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

Communication System: CW
Frequency: 173.4 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 173.4 MHz; σ = 0.77 mho/m; ε_r = 64.4; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 1.45 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 42.0 V/m; Power Drift = -0.830 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 1.65 mW/g; SAR(10 g) = 1.02 mW/g
Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 42.0 V/m; Power Drift = -0.830 dB
Peak SAR (extrapolated) = 1.82 W/kg
SAR(1 g) = 1.3 mW/g; SAR(10 g) = 0.981 mW/g
Maximum value of SAR (measured) = 1.27 mW/g



Date Tested: 11/02/2009

Body-worn SAR - Lithium-ion Battery Pack - 141.0 MHz (IC Mid Channel Freq. Band 138-144 MHz)

DUT: HARRIS Unity XG-100P; Type: Multi-band PTT Radio Transceiver (VHF Band); Serial: EM067

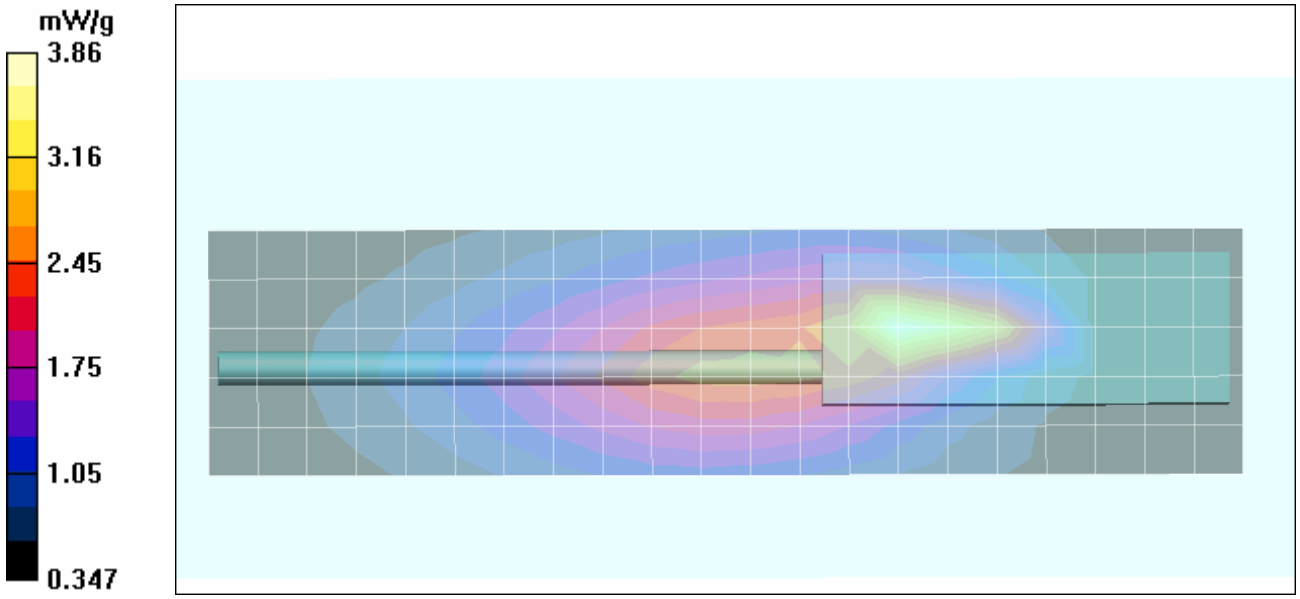
Body-worn Accessory: Metal Belt-Clip; Audio Accessory: Speaker-Microphone

Ambient Temp: 23.8°C; Fluid Temp: 22.2°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

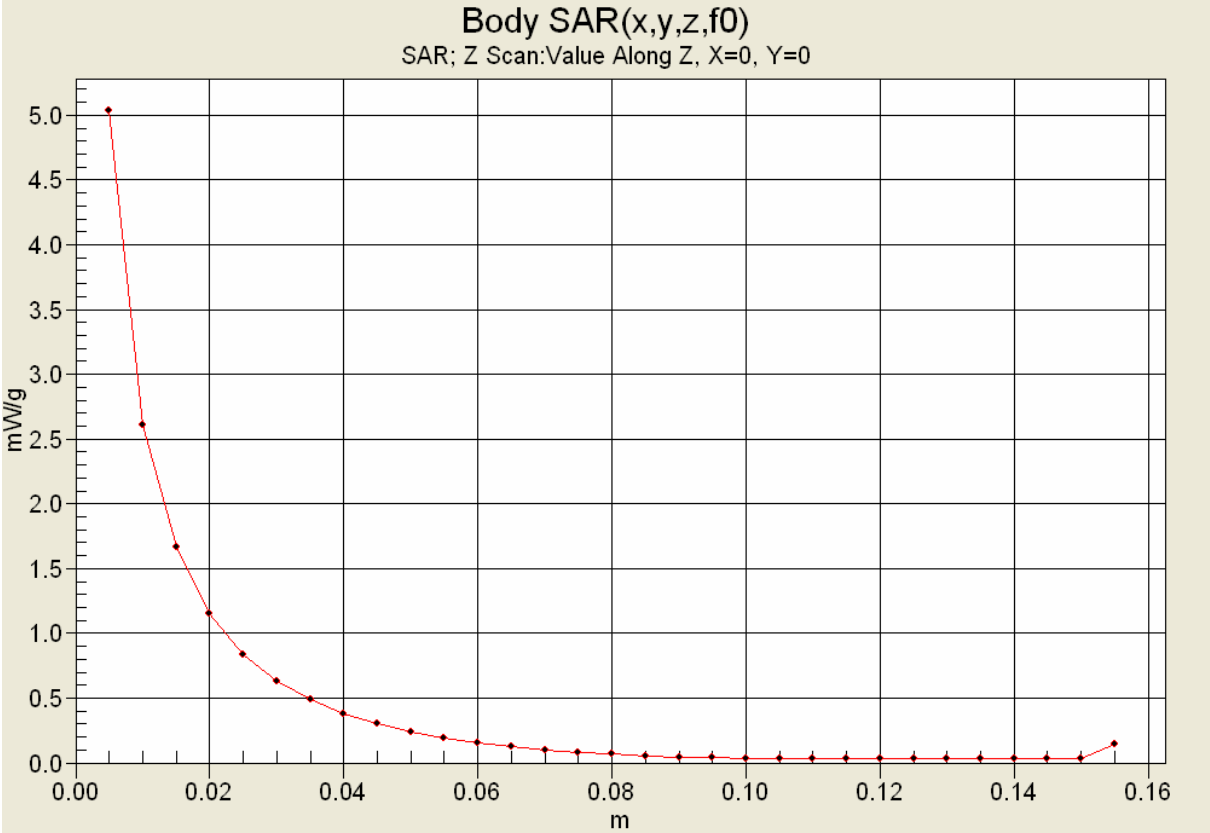
Communication System: CW
Frequency: 141.0 MHz; Duty Cycle: 1:1
Medium: M150 Medium parameters used: f = 141.0 MHz; σ = 0.76 mho/m; ε_r = 61.6; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.8, 8.8, 8.8); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Side Planar; Type: Plexiglas; Serial: 161
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Body-worn SAR - 1.2 cm Belt-Clip Spacing from Back of DUT to Planar Phantom
Area Scan (6x22x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (measured) = 2.29 mW/g
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 49.7 V/m; Power Drift = -0.326 dB
Peak SAR (extrapolated) = 11.9 W/kg
SAR(1 g) = 4.55 mW/g; SAR(10 g) = 2.45 mW/g
Maximum value of SAR (measured) = 3.86 mW/g



Z-Axis Scan

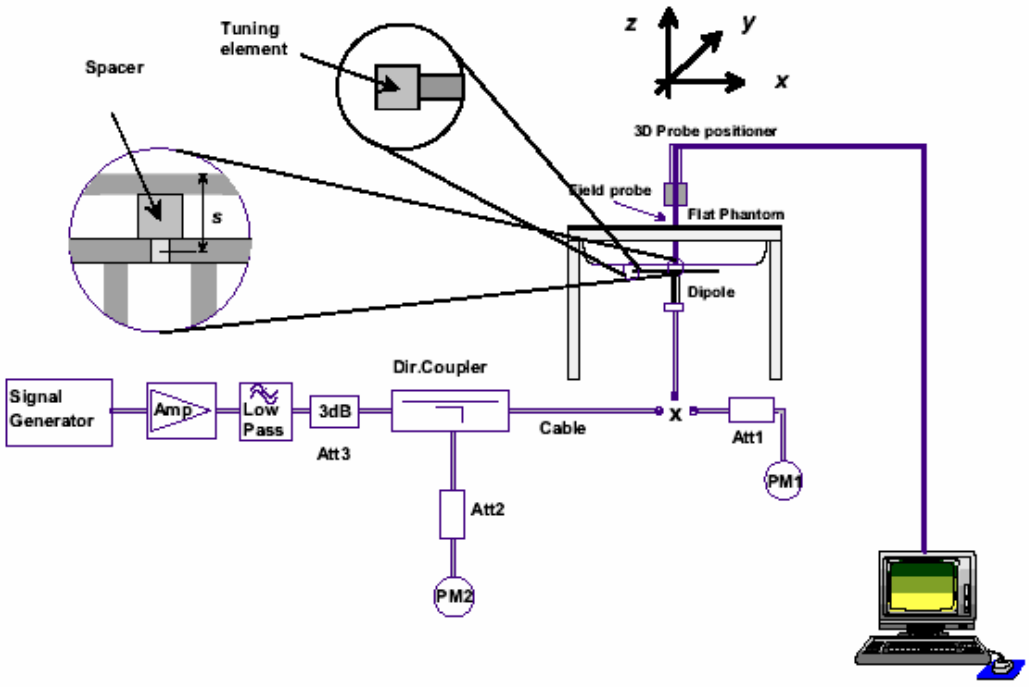


APPENDIX B - SYSTEM PERFORMANCE CHECK

SYSTEM PERFORMANCE CHECK MEASUREMENT SETUP

DASY4 System with Plexiglas Validation Phantom

300 MHz Validation Dipole Setup



System Performance Check Measurement Setup Diagram (IEEE Standard 1528-2003)

Date Tested: 10/29/2009

System Performance Check - 300 MHz Dipole - HSL

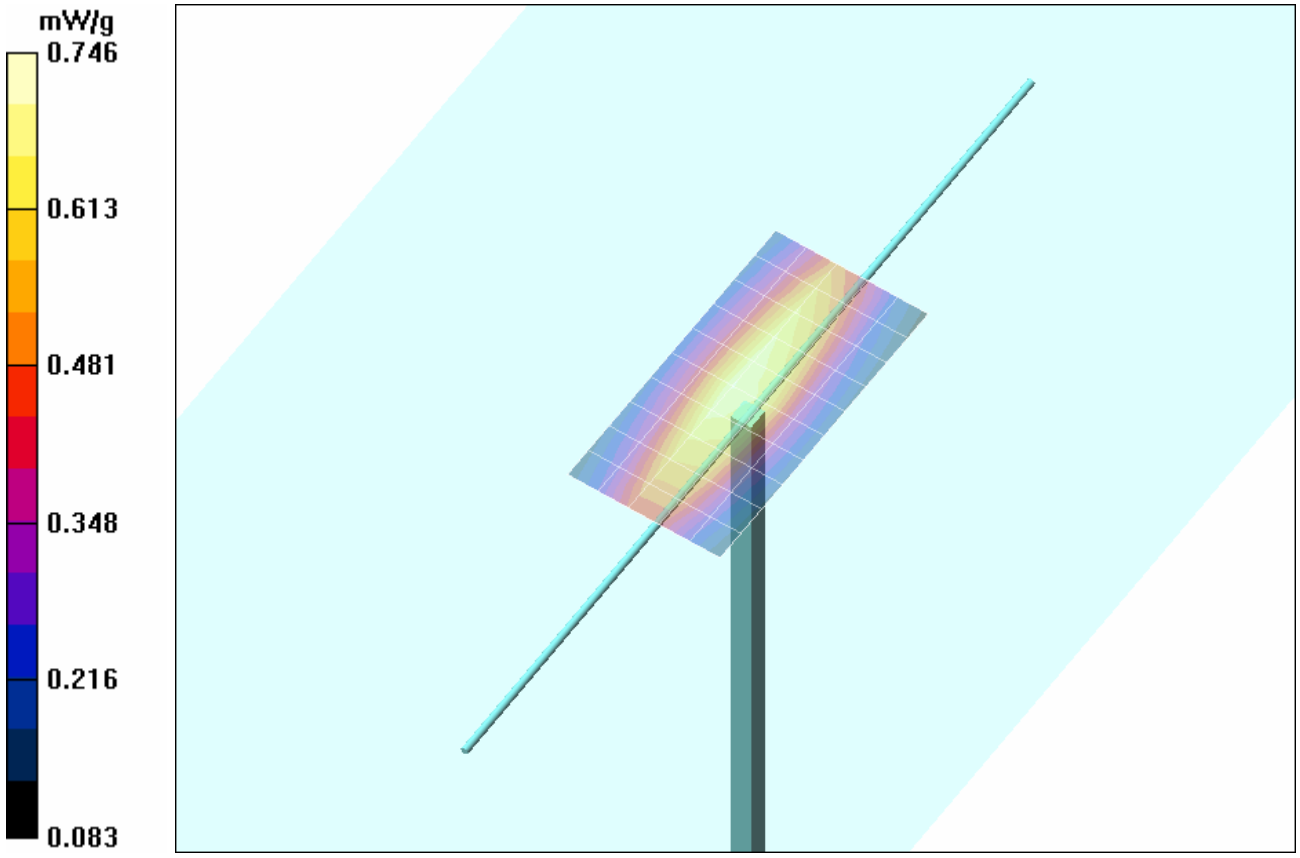
DUT: Dipole 300 MHz; Asset: 00023; Serial: 135; Calibrated: 26/01/2009

Ambient Temp: 24.1°C; Fluid Temp: 23.1°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

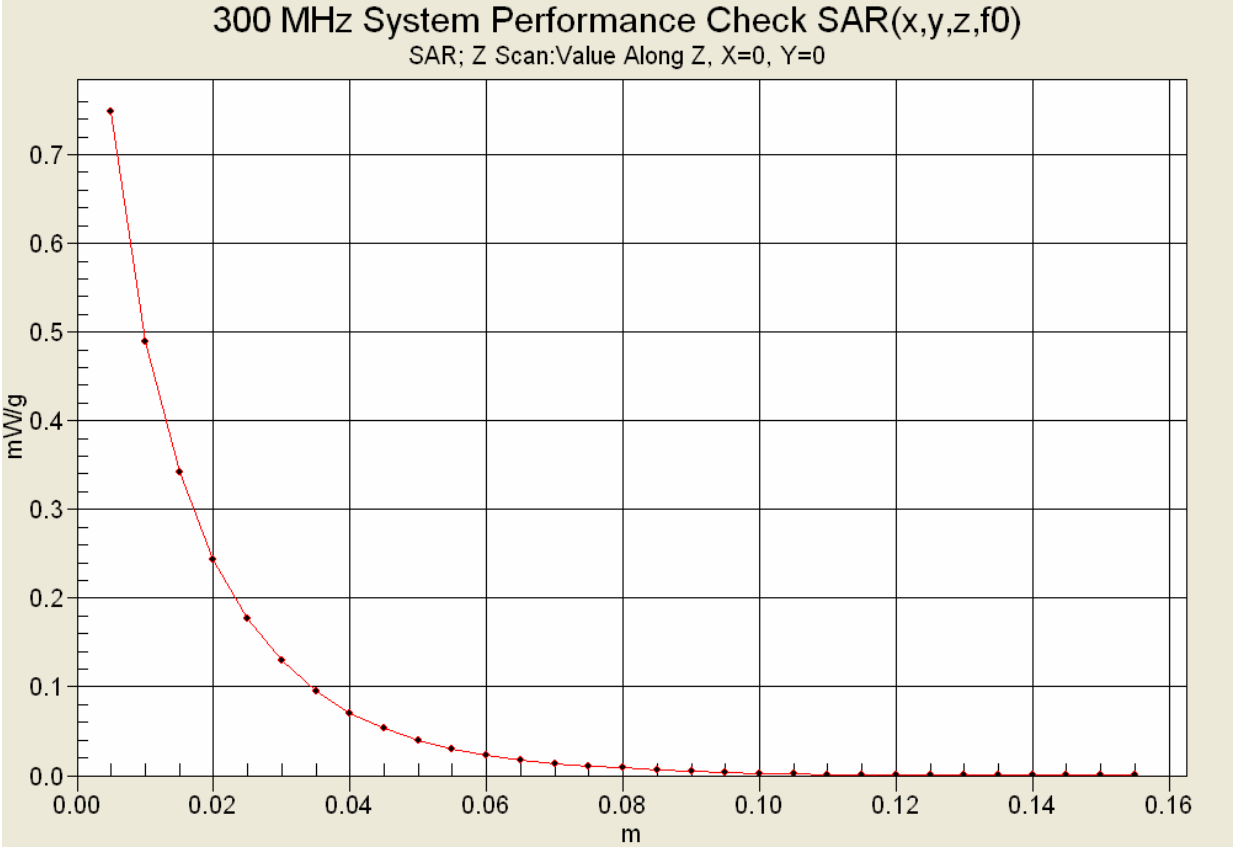
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 300 MHz; Duty Cycle: 1:1
Medium: 300 HSL Medium parameters used: f = 300 MHz; σ = 0.89 mho/m; ε_r = 45.2; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.2, 8.2, 8.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

300 MHz System Performance Check
Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.707 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 28.9 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.507 mW/g
Maximum value of SAR (measured) = 0.746 mW/g



Z-Axis Scan



Date Tested: 11/02/2009

System Performance Check - 300 MHz Dipole - HSL

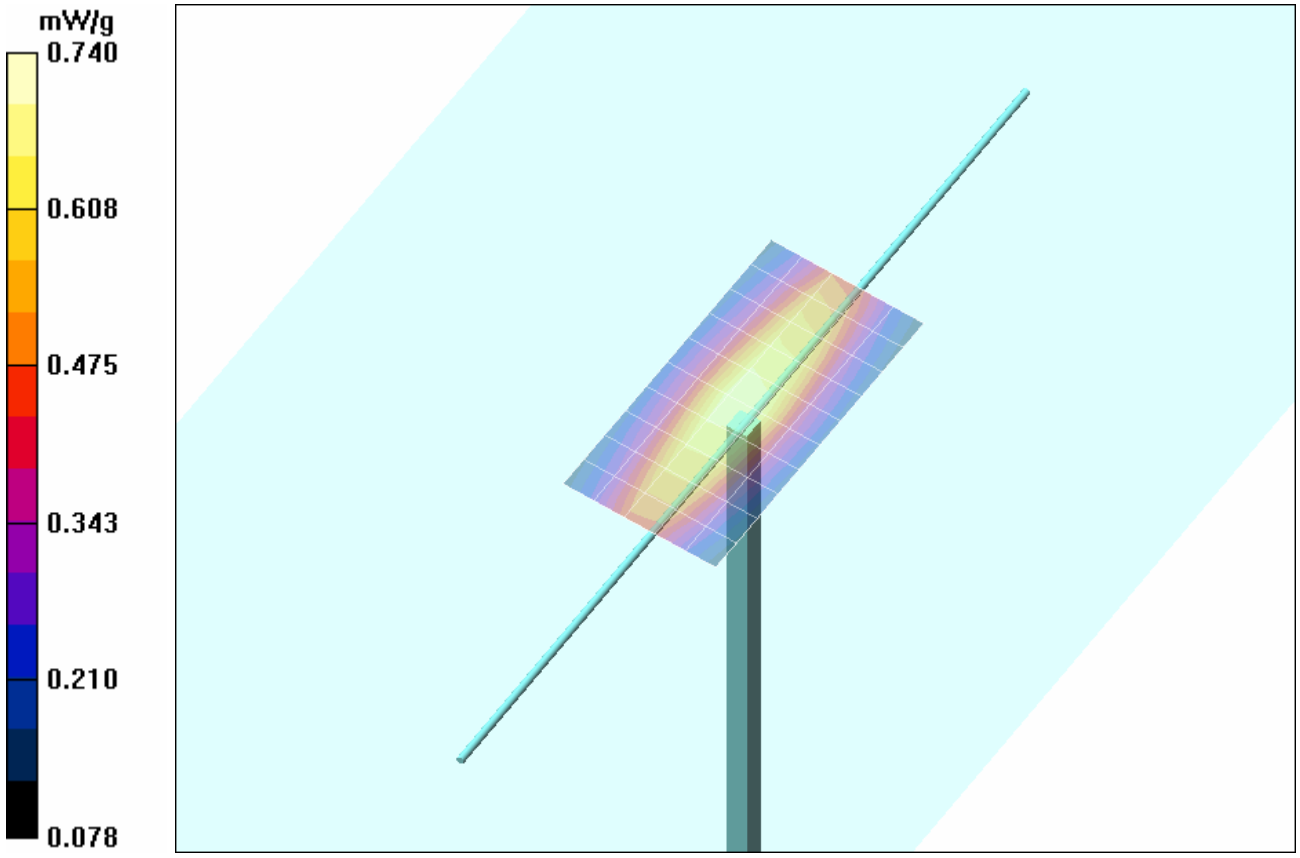
DUT: Dipole 300 MHz; Asset: 00023; Serial: 135; Calibrated: 26/01/2009

Ambient Temp: 23.5°C; Fluid Temp: 22.5°C; Barometric Pressure: 101.1 kPa; Humidity: 35%

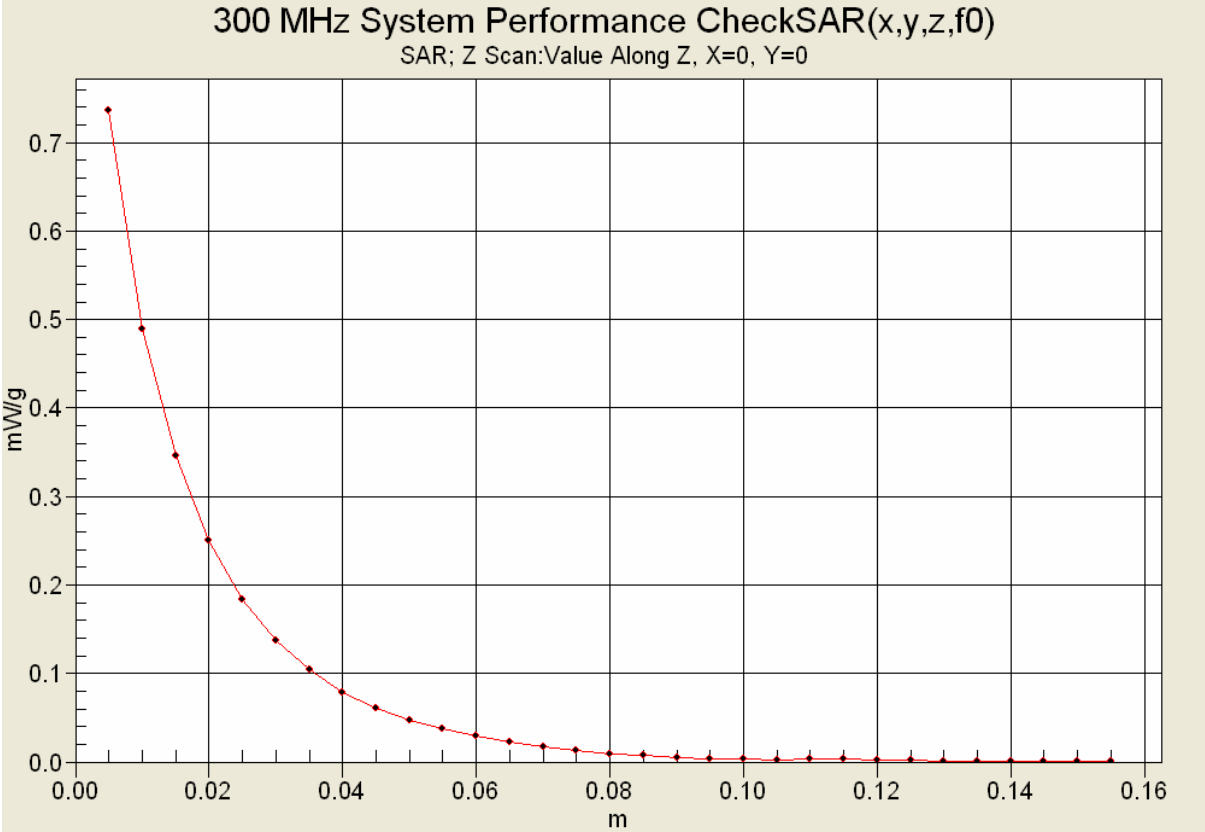
Communication System: CW
Forward Conducted Power: 250 mW
Frequency: 300 MHz; Duty Cycle: 1:1
Medium: 300 HSL Medium parameters used: f = 300 MHz; σ = 0.89 mho/m; ε_r = 46.4; ρ = 1000 kg/m^3

- Probe: ET3DV6 - SN1590; ConvF(8.2, 8.2, 8.2); Calibrated: 16/07/2009
- Sensor-Surface: 5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 28/04/2009
- Phantom: Validation Planar; Type: Plexiglas; Serial: TE#137
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

300 MHz System Performance Check
Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.684 mW/g
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 28.9 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.507 mW/g
Maximum value of SAR (measured) = 0.740 mW/g



Z-Axis Scan



APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

300 MHz System Performance Check (Head)

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Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
29/Oct/2009
Frequency (GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

****

0.2000	49.97	0.80	48.80	0.81
0.2100	49.50	0.80	48.47	0.82
0.2200	49.03	0.81	47.76	0.83
0.2300	48.57	0.82	47.76	0.83
0.2400	48.10	0.83	47.48	0.84
0.2500	47.63	0.83	47.00	0.85
0.2600	47.17	0.84	46.41	0.86
0.2700	46.70	0.85	46.24	0.86
0.2800	46.23	0.86	45.39	0.88
0.2900	45.77	0.86	45.09	0.88
0.3000	45.30	0.87	45.21	0.89
0.3100	45.18	0.87	44.39	0.90
0.3200	45.06	0.87	44.27	0.90
0.3300	44.94	0.87	43.99	0.92
0.3400	44.82	0.87	43.81	0.92
0.3500	44.70	0.87	43.37	0.93
0.3600	44.58	0.87	43.03	0.94
0.3700	44.46	0.87	42.86	0.95
0.3800	44.34	0.87	42.77	0.96
0.3900	44.22	0.87	42.44	0.97
0.4000	44.10	0.87	42.25	0.97

140/150/160/170 MHz DUT Evaluation (Head)

****

Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
29/Oct/2009
Frequency (GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

****

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.0500	56.97	0.69	71.73	0.77
0.0600	56.50	0.69	65.37	0.73
0.0700	56.03	0.70	68.01	0.70
0.0800	55.57	0.71	63.56	0.73
0.0900	55.10	0.72	56.29	0.71
0.1000	54.63	0.72	57.57	0.73
0.1100	54.17	0.73	56.68	0.77
0.1200	53.70	0.74	51.32	0.77
0.1300	53.23	0.75	52.49	0.77
0.1400	52.77	0.75	54.91	0.77
0.1500	52.30	0.76	54.46	0.79
0.1600	51.83	0.77	52.16	0.79
0.1700	51.37	0.77	53.40	0.79
0.1800	50.90	0.78	53.24	0.80
0.1900	50.43	0.79	54.18	0.81
0.2000	49.97	0.80	51.81	0.84
0.2100	49.50	0.80	50.58	0.82
0.2200	49.03	0.81	49.62	0.84
0.2300	48.57	0.82	48.04	0.85
0.2400	48.10	0.83	48.51	0.86
0.2500	47.63	0.83	48.24	0.88

300 MHz System Performance Check (Head)

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Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
02/Nov/2009
Frequency (GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

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Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.2000	49.97	0.80	50.38	0.81
0.2100	49.50	0.80	49.94	0.82
0.2200	49.03	0.81	49.76	0.82
0.2300	48.57	0.82	49.17	0.83
0.2400	48.10	0.83	48.71	0.84
0.2500	47.63	0.83	48.37	0.86
0.2600	47.17	0.84	47.96	0.86
0.2700	46.70	0.85	47.33	0.87
0.2800	46.23	0.86	47.34	0.88
0.2900	45.77	0.86	46.50	0.89
0.3000	45.30	0.87	46.39	0.89
0.3100	45.18	0.87	46.10	0.91
0.3200	45.06	0.87	45.43	0.91
0.3300	44.94	0.87	45.24	0.92
0.3400	44.82	0.87	44.78	0.94
0.3500	44.70	0.87	44.80	0.94
0.3600	44.58	0.87	44.38	0.95
0.3700	44.46	0.87	44.12	0.96
0.3800	44.34	0.87	43.61	0.97
0.3900	44.22	0.87	43.48	0.98
0.4000	44.10	0.87	43.15	0.98

140/150/160/170 MHz DUT Evaluation (Body)

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Celltech Labs Inc.
Test Result for UIM Dielectric Parameter
02/Nov/2009
Frequency (GHz)
FCC_eH FCC Bulletin 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC Bulletin 65 Supplement C (June 2001) Limits for Head Sigma
FCC_eB FCC Limits for Body Epsilon
FCC_sB FCC Limits for Body Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

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Freq	FCC_eB	FCC_sB	Test_e	Test_s
0.0500	64.37	0.72	69.64	0.71
0.0600	64.12	0.73	62.29	0.75
0.0700	63.87	0.74	67.57	0.72
0.0800	63.63	0.74	68.80	0.74
0.0900	63.38	0.75	57.28	0.75
0.1000	63.13	0.76	63.92	0.77
0.1100	62.89	0.77	67.94	0.79
0.1200	62.64	0.78	60.79	0.78
0.1300	62.39	0.78	62.37	0.77
0.1400	62.15	0.79	61.58	0.76
0.1500	61.90	0.80	62.57	0.77
0.1600	61.65	0.81	60.94	0.77
0.1700	61.41	0.82	64.43	0.77
0.1800	61.16	0.82	62.92	0.79
0.1900	60.91	0.83	61.32	0.81
0.2000	60.67	0.84	60.73	0.81
0.2100	60.42	0.85	59.88	0.81
0.2200	60.17	0.86	59.57	0.80
0.2300	59.93	0.86	60.41	0.83
0.2400	59.68	0.87	60.16	0.83
0.2500	59.43	0.88	60.68	0.84